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An Address
ON
TEMPERAMENTS: IS THERE A NEUROTIC ONE?

Being the Mid-sessional Address delivered before the Abernethian Society of St. Bartholomew's Hospital on June 8th, 1911,

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GENTLEMEN,—This is an age which concerns itself about "equality of opportunity" if not "equality" in many other directions. Democracy, represented by the State, insists that there should be no privileged class, that every person has a right to decent education, housing and food, and that the net for preferment, promotion, and office should be cast widely; but there are drawbacks to this Utopian scheme. We are not all constituted alike, and to avoid waste of energy on the part of the State to bring about equality, as well as on the part of the individual to be equalised, it is well we should know the "square pegs," "misfits," and even "impossibles"! We know people as tall or short, fair or dark, square or slim, and we know by experience that "one man's meat is another's poison," and if we can discover by some special means of observation the distribution of endowment, the capacity for education, the suitability for occupation, the fitness for after life, the taste, the disposition or tendency to act, or even the susceptibility to disease, in other words, if we can ascertain the "temperament" of the individual, we and he, or she, may be saved much disappointment and sorrow, possibly also of misery and shame.

In medicine we know that drugs act differently on different persons, and sometimes the normal effect fails to appear unless the dose is varied. Some cannot take quinine, others are affected unphysiologically by opium. One person becomes insufferably ill from the presence of a cat in the room, another at the odour of lilies. One suffers emotional disturbance at the creaking of new boots, another when a pencil writes on a slate, a third at the creasing of paper or the scraping of finger-nails, and similar personal idiosyncrasies have disturbed men of great mental power and ability. Schiller required the odour of decaying apples to stimulate him in composition, and Kant the sight of a button on a student's coat to help him to lecture, and I have known promising adolescents in my own profession who could work better when a photograph of their admired one was on their study table! We know the course of disease in different persons necessitates different treatment, we have learnt that different climates have to be avoided by different people—one cannot live at Ramsgate, for instance, and the other languishes at Ventnor, and *vice versâ;* and in treating diseases we have to remember that we treat the individual and not the disease; in other words, the treatment required must depend upon the "temperament," a knowledge of which may enable us to guard against diseases to which we may be particularly liable.

ORIGIN AND SIGNIFICATION OF "TEMPERAMENT."

Temperament is a very old word. It was in use over 2000 years ago and is said to have been originated by Hippocrates 400 B.C. The ancients had no stethoscopes, thermometers, watches, nor instruments for measuring arterial pressure other than the end of the fingers. Moreover, they had no physiological and but little anatomical knowledge of the internal organs, which they could neither view as we do nor bring them into recognition outwardly. In consequence they eagerly cultivated a knowledge of external signs, and finding that people differed, often remarkably, in external conformation as well as in mental and moral character, they attributed those differences to the excess of one or other of the humours of the body—e.g., the blood, bile, lymph, or phlegm, and according to the mixing of these fluids there resulted an excess or deficiency in their constitutions, and so persons were described as of a sanguine, bilious, or melancholy and phlegmatic temperament. Even in the remote past, dark or fair persons were known to be predisposed to diseases of different types or classes, and the same diseases were known to affect them differently and needed different treatment for their relief. Experienced physicians and surgeons in more modern times, relying on the maxim that we are often better known by our looks than our words, have followed most keenly the study of resemblances and differences in their patients—certainly keenly in this hospital in the time of Dr. Patrick Black, who, without examining them, arranged his out-patients on seats according to the "physiognomy" of their disease. By this experience many of them arrived at a sort of instinct or divination by which the true character and the history of their individual patients could be read in the external features and physical conformation. They were enabled to discover the presence of, and, it is stated, the predisposition to, disease in their patients, to foretell the nature of their illness as well as its probable termination, thus laying the foundation of prognosis, and, as is further added, to proclaim the nature of the moral affections.

The word "temperament"—from *temporare*, to moderate, derived from *tempus*, time, the great temperer—is the most popular and least exact of all the terms used in describing differences of organisation. One writer states that all creeds and opinions are matters of chance and temperament, giving it the widest range and the most varied possible use, but implying that, given a certain personality or certain physical characters, the corresponding mental as well as moral traits may also be predicted. The words *temperamentum*, *temperatura*, *temperatio* have also been used in the same sense, and so have *complexio*, crasis (κρᾶσις); eucrasia, a good temperament; eu-exia (ἕξος), a good constitution; euchymia (χυμός, juice), a good state of the humours. The different mixing or tempering of the constituent parts of the body was assumed to cause the difference between individuals, this difference of organisation being due to a difference in the function or activity of the organs concerned.

To define the word temperament is not an easy task. By some it has been applied to indicate the relation between certain physical states (such as the size and form of the body, the size and shape of the head and face, the colour of the hair, eyes, and complexion) and mental states. Others regard it as the actual combination of certain physical with certain mental characters. There is a danger, however, in reading too much from physical characters to mental traits, and there is no doubt that this has been overdone, minute details and deductions having been inferred which experience would neither warrant nor justify. We ourselves know the impulsiveness, the love of change, and the unwarranted hope of blue-eyed, red-haired people (the sanguine temperament) as contrasted with the caution, persistence, and ambition of the dark-eyed and black-haired (the so-called bilious temperament). Yet surrounding circumstances might so modify natural impulses and tendencies that a carroty-haired girl—a *femme blonde*—might be transformed into the unemotional and simple nature of her black-haired sister, the *femme brune*. John Stuart Mill clearly recognised that differences of bodily structure were correlated with different mental states, and George Eliot went further and declared she never knew brains and red hair associated.

Mainly, however, the term "temperament" came to mean certain physical conditions, and Galen, in a Latin treatise translated by Linacre, suggested nine kinds of temperaments, based upon four simple physical states, which he described as moist, dry, hot, and cold. Four others were obtained by mixing these—viz., hot and moist, hot and dry, cold and moist, cold and dry—the ninth, which he called the balanced temperament, being made up "through the proper mixture" of all the others. According to their preponderating activity and in accordance with the system of humoral pathology the function of the four chief organs in the body gave their names to corresponding temperaments—viz., (1) the heart and blood; (2) the liver and bile; (3) the spleen, which was surmised to secrete black bile; and (4) the brain, with the pituitary body, which secreted phlegm, and thus the varieties described by Galen were reduced to four. In order fancifully to delineate the four temperaments they have been considered analogous to the ages of man and to the seasons of the year—the sanguine corresponded to childhood and spring, the bilious to youth and summer, the melancholy to middle age and autumn, and the phlegmatic to old age and winter. With

the progress of experimental physiology the spleen was discovered not to secrete black bile, and on anatomical grounds the atrabilious or melancholy temperament was discarded, and in its place was suggested a nervous one, and we desire to know if such exists?

TEMPERAMENT A TENDENCY TO REACT TO STIMULI.

As to whether temperament is physical or mental, or neither, probably no two authorities are fully agreed, but in our view it is neither a *combination* of states nor their *relation;* neither is it a physical condition but a *mental* "tendency." It will be taken throughout this paper in a psychological sense and as indicating certain reactions or tendencies on the part of the organism, in the first place towards its environment, or in other words, the tendency to certain kinds of conduct, based on the correlation of physical with mental states, and secondly, the reaction of the organism to disease. We cannot fail to recognise that there is a correlation between certain bodily states and certain mental states shown by the appearance of the brain in certain forms of insanity, and there is also a correlation between certain bodily states and certain morbid conditions described as scrofulous, gouty, cancerous, hæmorrhagic, rheumatic, sthenic, and dartrous tendencies; but empirical generalisations such as these must be further investigated before progress can be made in definite and actual correlation. Whilst therefore appreciating the reality of such a thing as "temperament," and whilst accepting it as a psychological tendency, A. Stewart and others who have written on the subject consider the correlations of the four chief types of temperament to be: (1) for the sanguine type, persons who are short and often stout in later life, who have fair complexions, blue eyes, and red hair; mentally active, emotional, and excitable, but lacking in persistence and steadiness and showing a tendency to acute illnesses; (2) for the bilious or choleric, those who are thick set, rather clumsy folk, with dark eyes, hair, and complexions, people who are often gouty or rheumatic, and who are mentally unemotional, deliberate, and jealous; (3) for the phlegmatic or lymphatic, people with bulky forms, light hair, pasty complexions, slow movements, mentally "heavy on hand," slow, and plodding, a type which tends to dementia and diseases of a slow course; and (4) the nervous, with slight, slim, tall figures, large foreheads and pointed chins, dark eyes and sallow skin, those who think quickly, react rapidly, are susceptible, but easily get over their emotions. These tend to suffer from nerve storms, not infrequently ending in insanity. Probably no person has only one or other of these four recognised types, the chief characteristics in any one person partaking of the compounding of all the varieties, hence the necessity for some other more definite classification. Even in twins, whom we should expect to be most alike, there is often a greater divergence than there was between Esau and Jacob.

THE BODY ONLY THE AGENT OF MENTAL EXPRESSION.

If we take the body to be the organ of the mind's expression, and the body must be considered biologically as an aggregate of unit characters each of which has independence of a kind; we shall find that temperament, in the sense of being the aggregate of a man's physical personality, is an untenable theory, and the term has ceased to have any definite anatomical meaning. The human organism, like any other, reacts to its environment, and it is this tendency to react which I shall describe as "temperament." Any stimulus, external or internal, impinging upon any sensory areas of the body tends to come out as movement, and it is this reaction to outward or inward excitement which is the basis of human activity. Precisely as the amœba is seen to contract from the excitement of contiguous particles which act as stimuli to it, so exactly does the human body react to its stimuli. It is this reaction, in my opinion, which is the fundamental quality of temperament, and we know how infinitely varied is this reaction in different individuals. A race or a nation is composed of many individuals, as the individual is composed of many cells, and the national or racial temperament is the tendency it has to react to stimuli from within or from without.

INFLUENCE OF ENVIRONMENT.

The physical organism, as we all know, is the resultant, so to speak, of developmental forces—i.e., it is the result of inheritance. The original gametes—the male and female cell with their chromosomes—unite and become the zygote out of which the individual arises and grows, by the power of certain chemical combinations, through certain states based upon laws, which, although we know little of them, we describe as the laws of inheritance. In the study of heredity we find certain characteristics dominant in the parents repeating themselves in the offspring, which is a blend of all its ancestors, but the influence of the environment must not be overlooked as a controlling power, for "nature" and "nurture" both count. In the course of long ages the surroundings are undoubtedly a great modifying factor upon growth and development, carrying with them also a certain method of reaction which I call a "temperament." The nature of man is "like the dyer's hand, subdued to what it works in." The capability for adaptation and improvement which the history of man records shows so many changes that it would be impossible correctly to infer definite mental qualities from outward appearances. Food, climate, occupation, soil, and the general aspects of Nature all exercise a modifying influence on man's development.

We can tell the East Coast agriculturist, the central manufacturer, and the Western miner from their occupations, food, soil, &c. We can also tell the doctor, lawyer, solicitor, and sailor by the influence of their environment. In the vegetable kingdom we see in plants that the environment counts much as a controlling power. Alpine plants when brought down to the plains assume plain characters, and those characters created by environment become fixed, for the plants come true to the seed, reappearing with their acquired characters when the seed is sown. The same with water plants which as a rule have deeply dissected leaves when growing in water. Land plants thus grown tend to take up the water characters, and these characters reappear again when the seeds of the new plant are sown. The same influence of the environment occurs with plants of the dry desert or with those of moist Equatorial continents. As in plants, so in animals and man. The environment is able to modify appearance, stature, language, customs, and conduct, and, owing to environmental differences, the geographical limitation of man is rarely an ethnographical one, as we know in regard to our own country.

ORIGIN OF THE BRITISH PEOPLE.

Let us briefly review the history of man in the British Islands in order to show his composite origin and his changes by environment, also in order to prove that he cannot possess a simple temperamental type as suggested by some authorities. In the Pleistocene Age, some tens or hundreds of thousands of years back, Great Britain and Ireland were parts of the main land; rivers ran north and west to a coast line far out into the Atlantic, probably where the hundred-fathom soundings show the dip into oceanic depths. In this age lived Palæolithic man as a hunter and fisherman, using flints, bone and horn tools and weapons. As contemporaries he had the mammoth, the cave lions and bears, the straight-tusked elephant, wild horse, hyæna, Irish elk and reindeer, the hippopotamus, and the rhinoceros. He had attained civilisation, as may be seen from the carvings and drawings of the river drifts and the cave remains since collected.

The Glacial epoch came on during this period and swept away the mammoth and its congeners, and with it Palæolithic man. A new era brought a new race from the continent of Europe, and Neolithic man was later succeeded by man of the Bronze Age, then of the Iron Age and of the lake dwellings. Neolithic man, who probably knew nothing of agriculture, was short and dark, dolichocephalic, with a cephalic index of 71 or 72, and with black curly hair. It is stated that curly hair is rarely associated with great intelligence, but this dark type from the Iberian Peninsula is the oldest stock in our country, and its remains are still found in Wales, in some parts of Cornwall, and in the West of Ireland. The Bronze Age saw the arrival of a new blonde race, who were brachycephalic, with a cephalic index of 78, who crossed the Channel about 1200 B.C. and introduced the Aryan tongue into Britain. This fresh immigration came from the parts between the Rhine, the Seine, and the Garonne; the northern became the Goidelic and the more southern, the Belgæ or Galli, became the Brythonic, using a language which became the parent of the present Welsh. Later, we have records of incursions by Phœnician traders and by Greeks from Marseilles, followed by those of

the Danes, Saxons, and Normans. Under such circumstances who can claim for any of the inhabitants of this country a pure temperament such as is academically suggested in the types presented? The absurdity of such a suggestion is too evident. What with the intermixture of races in the past and with local migration in the present (by means of railways and other methods of communication) it is impossible to look upon modern civilised man temperamentally as other than an amalgamation in his own person of different developmental forces, many of them of course arising out of environmental influences. Defoe says:—

> "A true-born Englishman's a contradiction,
> In speech an irony, in fact a fiction."

RELATIONS OF UNIFORMITY OF STRUCTURE AND QUALITIES OF MIND.

Although the Englishman is made up, as we have shown, of grafts from every race of the Aryan stock, yet abroad he is always "spotted"; at any rate, the hotel keepers seem to find it out! Is the American, the Frenchman, or the German identified by some peculiarity of configuration which is also always associated with certain mental qualities or by certain tendencies in conduct? I venture to deny any such constant association. Uniformity of structure in people is one thing, but the uniform association of structural qualities with qualities of mind or conduct in them is quite another. There is no more reason for considering that certain uniformities of structure (which enable us, for instance, to identify a Jew, a Frenchman, a German, or any other nationality) should imply similar temperaments than there is to suppose that such uniformities of structure or similarity of configuration as enable us to identify members of the same family should imply for each of its members the same temperament or the same mental reaction, a condition we know not to exist. It must not be assumed from racial likeness that structural similarity implies the same invariable association of mental qualities. For this reason we protest against the *physical* explanation of "temperament." The same excitation of the cortical cells in one person, even of the same family and descended from the same ancestors, gives rise to different effects when applied to another member of the family, and it is erroneous to associate physical similarity with uniform mental qualities.

CONSTANCY OF SOME FAMILY PECULIARITIES.

It is true that there are family peculiarities which are very constant—such, for example, is the nose of the Bourbon Royal houses of France, Spain, and Naples, or the Hapsburg lip,—yet these outward marks imply no uniform mental correlation. Analogous peculiarities may characterise races, yet they may not imply similar mental tendencies or temperaments in these races. Some of these family peculiarities are often in the nature of degenerate stigmata. The Hapsburg lip is not inherited by the females, yet it is transmitted by them. Napoleon I. married an Archduchess of Austria, and her son, the King of Rome, inherited the Hapsburg characters. Charles V., the greatest European potentate of the sixteenth century, had such a well-marked lower lip that each time he ate, it is said to have touched his nose. Philip II., son of Charles V., possessed this prognathous skull and lip of the Hapsburgs, and he was an unmistakable descendant; but Don John of Austria, although acknowledged to be another son, had none of these characters, and history has since rejected this filiation and has relegated his ancestry to the German servant, Barbe Blomberg, and her vulgar paramour. Some doubt has existed as to the legitimate claims of Louis XVII., as he inherited none of the prognathism of Louis XVI. and Marie Antoinette, who were both Hapsburgs.

THE FACE AS AN INDEX TO CHARACTER.

I do not say that much information as to mental character is not to be obtained from the face. The whole trend of experience is the other way; all I say is that too much trust must not be laid upon the face, for we are apt to deceive ourselves and be deceived by excessive reliance upon the physiognomy. Many attempts have been made to read temperamental traits from the face, and faces have been divided into the square for the bilious and lymphatic, tapering for the sanguine, and for the reflective and introspective the so-called melancholy face; but it hardly need be said this question of expression implies a much more complicated inference than seems to us on the surface, for we have the square-jawed midnight marauder—the typical "Bill Sykes," and we have the tapering face of this man's tool—viz., the sneak-thief, who is content with minor achievements, such as stealing purses and picking ladies' pockets in the intervals of loafing. There is no doubt the physiognomy has been greatly exploited as a field for information in regard to character. As an expression of the emotions it is certainly of value, particularly of those fundamental emotions relating to pleasure and pain, for the face, like the barometer, is a good indicator of *existing* emotional weather, but too much confidence must not be placed in the face as the chief interpretative medium of character. In regard to the elements of the physiognomy, the eyes are looked upon as the "pole-star" for those who seek guidance as to the emotions: the eyes of Chatterton had "fire rolling at the bottom of them," and those of Burns were "like coals of living fire," and Sir Walter Scott's "literally glowed"; but the hand is also a valuable guide. Nevertheless, I am inclined to think that the most reliable element in the face is the mouth. Possibly the more fleeting and transient feelings of the moment are better reflected in the eye; whereas the fixed, firm, decisive, and permanent constituents of character are in the mouth. We all know the roving eye which looks upon everything and sees nothing, and we recognise the inconstancy conveyed by the shifting eye.

As to the general mental disposition, we rightly associate the different emotions—e.g., joy, caprice, anger, fear, and ambition—not with the bony framework of the face, but with the more mobile features controlled by the muscles and nerves of the face. It is the *tout ensemble*, the whole assemblage of the visage in which we see emotion and which rightly show character. For instance, we know one person to be suffering from melancholia, another from mania, a third from dementia, a fourth from confirmed epilepsy, and a fifth from general paralysis by outward facial characteristics. A sixth, perhaps a summary of all the others, which forms the basis of the insane temperament, gives, on the other hand, no indication by physical signs—i.e., one needs to find out the mental reaction to ascertain the temperament. Neither the highest powers of the microscope nor the most skilled chemist would be able to say that a person possessed the temperament of the paranoiac, who is the most dangerous as well as the most chronic of all the varieties of insanity. For this it is necessary to ascertain the mental reaction.

CLASSIFICATION BASED ON THE MENTAL REACTION.

The mental reaction or tendency to act must be taken as the only guide to the temperament or the personality, and mental reaction originates primarily out of the master structure—viz., the brain, which gives to the individual the form of character or the conduct he tends to. The brain of man differs from that of the lower animals, and there is also a racial difference, for the brain of an Englishman differs from that of a Chinaman. There is a diversity in shape, weight, size, quality, and convolutional pattern, and a corresponding diversity is seen in their mental reaction. It is the reaction of this master tissue that forms the basis of temperament. In other words, it is the reaction to the environment which constitutes the scheme for its proper classification or subdivision, and this is the one which has been verified by observations and which, to quote Ribot, may be divided into four chief types—viz., firstly, the active or responsive; secondly, the sensitive or receptive; thirdly, the apathetic, indifferent or amorphous; and lastly, the unstable or the nervous. These portray fundamental types of character, and they are based upon physiological observation. Man, as we know, feels and acts and wills according to the increasing definiteness or distinctness of some motive depending upon the inhibiting power of the person himself, and so, by adopting this scheme, we have a classification of temperaments on a physiological as well as a psychological basis.

THE ACTIVE OR RESPONSIVE TYPE.

Let us take, firstly, the active or the responsive type. We are all familiar with the strong tendency to action of some of our acquaintances or friends, as well as of some characters in history or fiction whose lives seem to be always directed outwards. The heroes of historical novels (as pointed out by Margaret Ashmun) and all knights of the sword and pistol are of this type. These persons are people of purposeful vigour, full of courage, and they love action,

excitement, and adventure. They are the roystering daredevils of heroic novels, brimming over with superabundant spirits and full of the zest of life, all action, and "damn the consequences." They are always optimistic, and they exhibit in their persons human possibility to the Nth Power. They are the giants and gods of mythology. Oliver Cromwell and Wellington remind us of the active type, and in Shakespeare Prince Hal and Hotspur are also of this type. D'Artagnan in Dumas' "Three Musketeers" is another example, and the personification of the type is shown in the classical descriptions of Hector, Achilles, Odyssey, Æneas, and possibly Joan of Arc, but it is not the fashion for women to be of the active resolute character, although about 1 in every 18 women is thus distinguished. As they are unable to pull down Hyde Park railings when they have revolted against deep-felt grievances they are laughed at and jeered when they attempt to leave the polite emotions for an active campaign. In further derogation of the gentler sex it is suggested that owing to the rarity of intellectual ability in women they have often played larger parts in the world's history than would be credited to men possessing similar achievements—that is to say, equal ability in man would not permit him to play a similarly large part. Mrs. Elizabeth Montagu, who obtained fame as a leader of society and an authoress, who attacked Voltaire; Mrs. Mary Somerville, who was acknowledged as a scientific writer on the spectrum and on Laplace, and possibly Miss Hannah More, the intimate of Garrick and the authoress of religious tracts, were women of this class. In domestic life the Mistress Page of the *Merry Wives of Windsor* is a cheerful, sprightly, active, and quick-witted woman, who deserves her husband's confidence and has it by her faithful, true-hearted allegiance to him; she is not to be taken in by the "greasy knight" Falstaff. Mistress Ford is another delightfully happy character, the active sunshine of the home, transparent and cheerful. Richard III. may be taken as a practical, direct, and promptly active man, the most wonderfully energetic and skilful murderer that ever sat upon a throne. A crooked and ambitious king, full of energy and insincere, he was a good example of the restless, active type.

THE SENSITIVE TYPE.

The sensitive kind, which is our ideal of refined womanhood, is the next type. The emotional type that sympathises with distress, that is quick to perceive and ready to respond, forms the list of attractive heroines of most of our love stories, and Shakespeare has them in abundance. Portia, the lady of Belmont, is the contemplative variety of this type, and she has been described by C. Cowden Clarke as a lovely specimen of a lovely woman. Like all distinguished characters, she has been roundly abused. She has been accused of pedantry and affectation, of conceit of learning, and of being the antipodes of modesty, but she showed courage at the right moment; she had ready wit and great presence of mind, and she is probably the most cheerful and pleasant spirited of Shakespeare's characters. Juliet is another of Shakespeare's love heroines, emotional and sensitive. From the moment she learns of Romeo's banishment, through her agonised pleadings with her parents to the subsequent interview with Friar Lawrence, as well as in the scene where she drinks the sleeping draught, we see her ceasing to be the weak loving girl of sixteen, pouring out the beauty of girlhood, and suddenly becoming a strong self-reliant woman in whom all the most powerful emotions and ardour of the really sensitive lover are fully portrayed. The delicate poetical love of Viola is the sweetest and tenderest emotion that ever informed a human heart. Jane Eyre and Lucy Snow are other characters which represent the sensitive temperament. Nor is this type limited exclusively to women; there are men of this type, and Mark Antony, if I interpret him rightly, was of this temperament. He was sensitive, and, although a warrior, he was effeminate and fond of pleasures. He married Fulvia, whom he repudiated for Octavia, and she was cast away for Cleopatra. Marcus Junius Brutus and probably Hamlet were also of the contemplative sensitive type. Job, Christian in the "Pilgrim's Progress," and Robert Elsmere may also be placed in the same category.

THE APATHETIC TYPE.

The other division is the mentally apathetic, the characterless or amorphous group, not because there is no character in these, but because most of the active and the sensitive elements of reaction are balanced and there is a suppression of any one definite element. These people do not feel deeply nor strongly, they are often heedless of others and are egotistical. Falstaff was of this type. He was charged with a host of vices; he was coward, swindler, liar, cheat, and braggart. He had a laughable effrontery, but he was no hypocrite. He was irrepressibly human and was always the friend of Prince Hal. There is much that is selfish and cold in many of this class, and they are not as a rule of the sensitive or the emotional set. Shylock the Jew, with his morality founded on disbelief in magnanimity and goodness, is of this order, and possibly so was Beatrice in *Much Ado About Nothing*. Her marriage with Benedick was a *fin de siècle* union not founded upon love but upon what might be called "friendly concoction." Cardinal Wolsey, although active and unscrupulous, was of the cold, calculating, and impervious manner, which, however, found its mastery in that of his king. Possibly Richelieu and Iago were also of this group.

I do not say these are the only types, as each of them is found mixed with the other, and even the resulting compound does not cover the whole ground of temperaments. Let us therefore see whether or not there is yet another kind, and which for the want of a better term we may describe as the purely "nervous."

THE UNSTABLE OR NERVOUS.

Into what class are we to place such characters as are pourtrayed by the Reubens, "Unstable as water, thou shalt not excel"? What about the many clever people who are often so scintillatingly brilliant that they can be best described as geniuses, but who are, nevertheless, so uncertain in their mental reaction that we are bound to call them capricious, fickle, explosive, and unreliable; persons whose friends are unable to predict what they will do next, who cannot be depended upon for kindness, devotion, or love even to their own relations and dependents, whose own natures know no standard of consideration, and who are described as wanting or lacking in mental poise. That such persons exist is without doubt, and some may be known among our own acquaintances. Take the well-known family trees which demonstrate insanity, epilepsy, suicidal tendencies, anti-social conditions, and bodily abnormalities, such as night-blindness, Huntington's chorea, muscular dystrophies, hæmophilia, or diabetes.

How are we to classify these people who suffer from such nervous diseases as are unknown among barbarous or even among half-civilised people—those, for instance, who are hysterical or eccentric, who are peculiar, or "cranky"; those who suffer from somnambulism or sleeplessness, from unreasonable irritability, from obsessions or nervous exhaustion, who may even be epileptic, yet are often extremely capable and often very talented and distinguished, but who nevertheless are abnormally susceptible to impressions, who suffer from functional neuroses of various kinds, who have neuralgias and headaches, who are dyspeptic owing to delicate digestions or premature decay of the teeth, who suffer from neurasthenias, and who are unduly sensitive to alcoholic stimulants, and who may even be moral degenerates, although possessing marked mental superiority in many directions? That such conditions exist compatible with high intellectual ability is seen from the history of many of our great men. Nature rarely begets a genius, but she does not often create imbeciles or idiots, she dislikes extremes of all kinds, and her tendency is towards the average or normal type both in mental and physical conformation.

GENIUS AND NERVOUS INSTABILITY.

Many persons described as possessing genius in certain specified lines are, as J. Nisbet has shown, of this class. They are often predisposed to states of extreme irritability, and they suffer from intense emotional disturbances resulting in severe nerve storms or outbursts of motor violence which can only be described as that of subacute mania. The rapidity of their mental processes and the intensity of their conative tendencies when aroused know no control and such are often out of all proportion to the amount of the stimulus.

Into what class other than the nervous or the neurotic are we to enter such persons? In this analysis we are bound to give much consideration to the maxim that "like begets like," yet in several instances there has possibly been a

segregation of some unit characters, although admittedly not on Mendelian lines. Shakespeare, the greatest poetic genius the world has ever seen, stands alone. He appears to have had no family history of ability, and little is personally known of him, which shows that mental characters, although distinguishable, are often unanalysable. The genealogy of the poet Cowper will illustrate my point. There was mental unsoundness on both sides of his ancestors, who were also distinguished for fame, as he was the grandson of a Justice and the great nephew of a Lord Chancellor. He suffered from religious hallucinations and had the strongest suicidal tendency, having to be cared for in an asylum for a period of over a year, yet he wrote "John Gilpin" when suffering from intense melancholia.

The poet Shelley had an insane ancestry; his grandfather suffered from melancholia and was a miser, but wealthy. His father showed similar tendencies. His mother was violent and domineering, but of lonely and solitary habits. At Eton he was called "mad Shelley," and the day before he was drowned at Spezzia, at the age of 30, he saw vivid hallucinations. In his picture his eyes are large and animated and wild, his voice was said to be high, weak, and discordant, and he was described as shy, solitary, anti-social, and the subject of ecstatic visions. Charles and Mary Lamb had a convergent heredity of nervous instability and nervous disease. Their mother died from dementia and paralysis at 50, and Charles died at 60 from what he himself described as the "cursed drinking." He was only 5 ft. in height, he stammered, and always suffered from headaches. At the age of 20 he had to be placed in an asylum, whilst his sister Mary stabbed her mother to the heart and killed her whilst insane. Wordsworth, who was a poet laureate, and his sister Dorothy are almost a parallel to Charles and Mary Lamb. Dorothy, like Mary, was insane and, like Mary, she was poetical and in the closest sympathy with her brother's pursuits. Dorothy Wordsworth was described by De Quincey as having eyes wild and staring, with an embarrassed and distressing utterance, a creature of fiery impulse. She later became mentally afflicted and never recovered her reason. Wordsworth himself described his sister as a "confirmed invalid." One of Wordsworth's children died from paralysis, another daughter was peculiar, being alternately gentle and vehement, and suffering from a form of insanity described to-day as of the "manic-depressive" variety. Wordsworth's father died at 42, and, like the fathers of many insane persons, was described as a man of great force of character, and his mother died from phthisis at 31.

The Coleridge family had a strongly marked insane history. The father of Samuel Taylor Coleridge was eccentric and absent-minded, and his mother is stated to have been uneducated and simple. He himself ran away from college, he quarrelled with his brother as a boy, and left home, being absent all night without apparent reason. Later in life he left his wife and children and went off to Malta. At the age of 30 he was broken down, and he died a wreck at 62. His son Hartley drank himself to death and died demented at 52. Southey came of an insane stock on his mother's side, who herself had paralysis in infancy. He had a maternal uncle described as "idiotic." His paternal uncle left his estate to a footman rather than to his sister who lived with him and who was dependent upon him. Carlyle described him as the "excitablest man" he ever met, and he died from dementia. His wife became insane, and also some of their children. He was described as having the most vehement pair of hazel eyes. The Sheridan family is notorious for neuropathic and psychopathic ancestry. The mother of Richard Brinsley Sheridan, the dramatist, was paralysed, and died demented at 42. His maternal grandfather also sank into dementia, and a maternal uncle was described as "absent-minded." He married twice, marrying the second wife a few weeks after the death of his first, and winning her, it is said, with copies of the love letters sent to his first wife. He died in debt and *déclassé* through drink. Only one son left issue, and he married into a healthy stock, of which famous issue has resulted.

Sir Walter Scott's family was permeated with nerve disorder. His father died from organic dementia, and his mother was aphasic and died from post-hemiplegic dementia. The maternal uncle also became demented. He himself had two sons who died childless, and two daughters, one of whom died from brain fever and the other, Mrs. Lockhart, from phthisis. His ambition to found a family "sleeps with him." Burns's father had an "ungovernable irascibility" and he himself was the victim of drunkenness and died at 37. One thing he loved since the age of 15, and that was "woman." He used to say his frame was blasted with a deep incurable melancholia which poisoned his existence.

Pope was deformed, rickety, and susceptible. A picture of him proposing to Lady Mary Wortley Montagu is in the National Gallery. Keats is described as neuropathic to the tips of his fingers. He had an ungovernable temper and was dwarfish, being only 5 ft. high. He had a passionate admiration for "Fanny Brawne," and Shelley said his alternation of despondent gloom and emotional passion was exactly like insanity. He had no trace of eminence in his ancestry, and his temperament and genius are probably a good illustration of a spontaneous variation. Byron's mother was most unbalanced, and his maternal grandfather suffered from melancholia and committed suicide. Another relative committed suicide with poison. Byron succeeded his grand-uncle, the "mad and wicked" Lord Byron. His father, the "mad Jack Byron," died from suicide whilst insane. Byron's father ran away with the Marchioness of Carmarthen, an heiress, whom he married and killed by cruelty, and treated his second wife, Miss Gordon, the same. A converging heredity of this kind in the ancestors fills our asylums. Byron was correctly described by his most intimate friends as "too mad, bad, and dangerous to know." His daughter Ada married Lord Lovelace, and her son, the Viscount Ockham, served as a common seaman and worked at Millwall as a ship's carpenter. Byron was tortured by hallucinations, he drank, and died an epileptic at 36.

Milton was gouty and lost his sight from inherited blindness. He was said to be most tyrannical in his home life, and is stated to have led his daughters a miserable time, accusing them of selling their father's works and cheating. He had four children, a son who is said to have died in infancy from ill usage, one daughter who was blind, another a cripple, and a third one died later. His own brother was described as a "disreputable judge," and in the collaterals were many "ne'er-do-wells." I quote this instance, as insanity is only one of a group of neuroses, and genius has to be paid for at the cost of many penalties.

Let us now trace the inheritance and the mental reaction in the biographies of some of the most eminent musicians, and we shall see the same penalty for genius and the same ravages of psychosis and neurosis, using these terms in their pathological sense. The genealogy of the Bach family has been traced for 200 years, from the founder, who was a baker, to Sebastian Bach, the climax of musical talent. Bach had 20 children, but no issue remains to perpetuate the distinctions of the father. Although many of the Bachs married musical people the family record is one of sickness, blindness, drunkenness, and mental defect. Although we can breed Arab horses, Derby winners, and prize cattle, it has hitherto not been possible to produce a "musical breed," showing the unfitness of genius to survive in a world requiring many adaptations, and the incapability of genius to continue its own distinctions. Schumann suffered from recurrent melancholia with suicidal impulses. His mother was singular and eccentric, and a sister died from what we now describe as "dementia præcox." Wagner was a wild and erratic boy, filled with the wildest mysticism. He grew up with a violent temperament and his actions were often uncontrollable. He had a mania for silks and satins, with which he always dressed himself to compose music. When travelling he also carried these to decorate his rooms, and when he died he requested that his room should be upholstered in pink and pale-blue satin. Schubert was worn out and died at 31. Beethoven suffered from a form of parancia described as mania migratoria; he was always changing his rooms and was paying for three or four different lodgings at the same time. He seems to have alienated his best friends through suspicious jealousy and false accusations. He began to get deaf about the age of 30, and in later life was completely deaf, so that much of the music he composed he himself never heard.

CONCLUDING REMARKS.

From what has been said it will be readily seen that genius may often prove to be a golden idol with feet of clay. Man is firstly a vertebrate mammal with the instincts of the

animal, but he has the power of inhibition and of auto-criticism, and through the influence of his environment he has attained a veneer of civilisation, and it is interesting to note that in insanity these acquisitions of his progress are gradually dissociated and shed in the inverse order of their acquirement, until at last man is left a wreck barely above the level of the animal. The cause of this reduction in insanity is probably some physical process in the cortical cells, or, in other words, some chemical change has occurred in the neurones, either directly through the influence of some poison generated from within or introduced from without the body, or indirectly by means of the environment, favoured, of course, by some inherited predisposition; and it is the study of man biologically—that is to say, the observation of his general activity or his total reaction under the influence of physical and psychological impressions—that enables us to infer the kind of temperament a man possesses. As we have seen, the predisposition to states of instability of control may be associated with distinguished mental superiority, and it is the degree of sensitiveness to pleasure and pain, the degree of motor restlessness and the degree of emotional tone exhibited by the individual which justify us in concluding that there is or is not present a temperament which we are entitled to describe as the neurotic, and it is by foreseeing this temperament that we can promote happiness and harmony where otherwise there would be intolerance, strife, and discordance. The more we see of the deviations of mental reaction and of physical structures the more we must be convinced that special modes of nutrition must have their special physiological expression, and that our work of prevention and relief as medical men is as important for the welfare of the community and the progress of the race as it must be for the well-being of the individual.

AN ABSTRACT OF

The Samuel Hyde Memorial Lectures

ON

OUTLINES OF MEDICAL HYDROLOGY.

Delivered before the Balneological and Climatological Section of the Royal Society of Medicine on May 15th, 17th, and 19th, 1911.

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LECTURE I.

Delivered on May 15th.

ANALYSIS AND DEFINITIONS.

THE association of the medical science of climates with that of baths and waters is not accidental, nor founded only upon a convenient grouping of two chief modes of physical therapeutics. It is a real and essential connexion, for whilst the influence of climates often operates alone it is inseparable from the action of baths. In truth, the climatic factor enters into every balneological equation. At every spa the influence of the waters and baths and of the local climate are inextricably mingled. Whenever a patient is submitted to baths or waters the climatic factor is an accessory, and sometimes a dominant, influence. For this reason the study of medical climatology, both in its general principles and in its local and special applications, can never be overlooked by the spa physician.

CLIMATE IN RELATION TO SPAS.

The various spas, both British and foreign, enjoy a great variety of climates, and it would be possible, and indeed desirable, that they should be grouped according to their climatic characters. Many waters and baths, apart from the climate, produce, with minor individual differences, the same general effects. The climate is often, therefore, the determining factor in the choice of a particular spa for invalids—and in this matter the general condition and temperament of the individual must be considered as much as his malady. Moreover, an appropriate climate will reinforce the effect of the spa treatment, as an unsuitable one will antagonise it. This applies with especial force to cardio-vascular and nervous disorders. A large number of patients so affected are benefited more than by any other form of treatment by subthermal baths, still or gaseous. Of these cases, some should never be sent away from home for treatment; others do best in the cool and bracing climates of our own island; some require in association with bath treatment the cooler temperatures of northern latitudes or sub-Alpine stations; and for only a certain number is the summer climate of warm valleys appropriate. The question of altitude should be particularly considered in its influence on the action of baths. Among the thermal baths of Europe there is a wide available range, from 100 to 5000 ft. It may be noted here that for the treatment of circulatory disorders Buxton, Harrogate, and Llandrindod all have a suitable medium elevation, and that Strathpeffer, although nearer to sea-level, has the compensating advantage of a more northern latitude.

Hot or thermal baths are best borne in cool places. Indeed, in the case of delicate persons they can only be taken with safety in a cool climate. Otherwise, the enervating effect of heat, added to that of the baths, may bring on a serious condition of what may be called "thermal debility," which is sometimes prolonged for many months, and may even be fatal. Thermal debility, which is the effect of an excessive or too prolonged thermal influence, is a too common and undesirable result of a course of baths. Among the many examples that have come to my knowledge I have sometimes thought that the fault lay quite as much in a bad choice of climate as with the baths themselves. I need not apologise for this incidental reference to what is in truth the most serious danger of spa treatment. We know that heat is one of those powerful stimulants that very rapidly become depressant. Its first effect upon the skin is vascular dilatation and increase of sweat, resulting in compensatory loss of heat. This pronounced and obvious action cannot escape notice, but the reaction of heat comes more slowly than that of cold, and sometimes in a gradual and insidious manner, and it may be after the treatment has ceased. The lessened heat production from thermal applications, the lowering of blood pressure, and the elevation of the temperature of the blood from prolonged and repeated hot baths, all diminish nervous and muscular energy, and bring about exhaustion of the spinal and cerebral centres and the heart. It follows that the reaction to heat must in practice be avoided with as much care as the reaction to cold is encouraged and promoted. In many conditions of senile weakness and premature degenerative changes the indication is for a mildly tonic and sedative climate. The only appropriate remedy, whether of bath or climate, must be temperate, soothing, sedative.

FACTORS IN HYDROLOGICAL TREATMENT.

The medical use of springs and of baths comprehends a bewildering variety both in the potable water and in the methods of its application. Hitherto, this too obvious diversity has rather obscured the truth that all such treatments have certain essential characteristics in common. The action of pure, sweet, and fresh water is the first of these common factors. The quality of *freshness* is of the first importance in the administration of waters, and springs differ widely in respect to this quality. It is not necessary to accept without reserve the theory of Armand Gautier that the water of certain thermal springs is in a real sense chemically "new," having the heightened activity of nascent matter. But it is common knowledge that the flowing, or in the old parlance the "living," fresh water of the fountain has a different property from that of the same water when still, contained in reservoirs or bottled. Consequently certain waters produce their most powerful effect when employed either for drinking or externally at the source.

The second common factor in these methods of treatment is not less important—namely, *heat*. For warm-blooded animals living in a cooler medium, heat is measured relatively to the temperature of the body. *Plus* or *minus* applications of heat are naturally inseparable from waters, whether internally or externally used. Baths act in the main as vehicles of energy, of which heat is the chief form. Water is in respect to the human body the commonest and most convenient medium of energy, but it is convenient to include in the category of bath treatment other media, such as dry sand and air, by which heat can be abstracted or conveyed. Again, inasmuch as baths of different kinds embrace the

chief forms of heat treatment or thermotherapy, it is convenient to include with baths the other forms of thermotherapy such as insolation, thermo-penetration, and artificial radiant heat, for which no physical medium is needed. It follows that in this division of our subject ought to be placed all our knowledge with reference to the effects of temperature (*plus* and *minus*) upon the functions of the body in health and disease, notably the effects upon heat production and conservation, and upon the processes of tissue change, and especially on the dissociation of tissues. All these actions are excited through the skin. This, again, will lead to a deeper study of the functions of the skin as the most extensive and sensitive organ of the body. I have long believed that when the relations of cutaneous conditions, and especially subnormal cutaneous temperature, to chronic disease have been more accurately ascertained, the use of thermotherapy by means of baths will be widely extended. Take, for example, hot pediluvia, which are so much employed at the baths of Mont Dore and elsewhere in France in order to produce an effect that was long ago described as "derivative" or "revulsive." In this country there are many persons in whom the cutaneous circulation is permanently defective, and the surface temperature, more particularly of the feet, sinks to 10° or 15° below normal. Systematic foot-baths at a temperature of 110° to 120° F. provide a means of restoring the peripheral circulation and relieving high arterial tension in many cases. It is clear that the thermal effects of baths, whether general or local, are deserving of attentive study.

We have next to notice the factors that depend upon the particular qualities of medicinal waters. Each spring has its own proper ingredients, and these must have their pharmacological effects, beneficial or otherwise. Under this designation we find certain gases, salts, acids, metallic elements, ferments, and other organic matters, all of which belong to medicinal springs, and the study of which must therefore be germane to the science of waters. We have also to take account of the particular *physical properties* of waters. Their temperature, electrical condition, tonicity, and radio-activity fall under this heading. Important researches during recent years have thrown much light upon the physico-chemical properties of medicinal waters, particularly of the thermal springs, and still much remains to be learned.

Thus we may conclude that the medical doctrine of water embraces two great branches. The first concerns itself with the use of this element in medicine solely as a vehicle of energy, whilst the other branch has to do with the various ingredients and physical properties of medicinal springs, and of the emanations and deposits in connexion with springs, and with their chemical and physical action upon the body, whether taken internally or applied either locally or generally to its surface.

QUESTION OF NOMENCLATURE.

What single comprehensive name can be applied to the whole science? It is surely unnecessary to argue the convenience, nay, the necessity, for such a general term. To meet the exigencies of the case such a name must satisfy certain necessary requirements. It should be inclusive of all the medical uses of water; it should be distinctive, and it should also, as far as possible, conform to, or be capable of, international use. It has seemed to me that the time may be ripe for reconsidering in this country the nomenclature of this branch of medical science. The subject-matter has, indeed, undergone so rapid development, even in our time, that the terminology of the last century has become inaccurate and even misleading. The varying connotations given to familiar words cause an unnecessary confusion, and the fundamental unity of the whole subject may be overlooked for want of a simple and inclusive name.

THE TERMS "BALNEOLOGY" AND "HYDROTHERAPY."

The word "balneology" appears to be a new one, and was but seldom used before the middle of last century. My earliest example is in 1840, when Krahmer of Leipsic published a review of the "balneological" literature of the preceding year. About 1870 the words "balneology" and "balneological" found their way into this country, and until the present time have been generally employed in England and in Northern and Central Europe. So far as I am aware, in spite of their wider dictionary meaning, their connotation is strictly limited by all authors to the properties and uses of *medicinal* springs. The various actions of water and heat are excluded. Although, as we have already seen, these form essential factors of all treatment by means of water and baths, they have been made to form a separate study under the name of hydrotherapeutics. In France, Italy, and Spain the term "balneology" has not found acceptance, although the expression "balneotherapy" is sometimes used as descriptive of a treatment.

It is true that derivation is a poor guide to the meaning and use of words, even in science; but the purist might urge that balneology (from *balneum*, a bath) should rightly have to do only with the *external* use of water. Custom has, on the one hand, *restricted* its application to the use of medicinal waters, and, on the other, *widened* it to their employment internally as well as in the form of baths. A more serious objection to the claim of balneology to be a proper name for the whole science of waters is that it is too narrow, and that modern usage has confined its connotations to the medicinal spring.

According to the Oxford Dictionary, hydrotherapeutics is defined as "that part of medical science which treats of the therapeutic application of water." In the works which I have quoted there has been, so far as I am aware, no question of applying this term to medicinal waters. I must now refer to a tendency in some of the most recent writers[1] on hydrotherapy to enlarge the connotation of that word. It is even proposed to include under hydrotherapy the whole science of waters and of baths. I think it is not difficult to trace the origin of this proposal. For more than a generation the accurate study and practice of hydrotherapy had proved the efficacy of simple thermal applications in many disorders. As the part played by these great primary and general properties of all waters became evident, so the secondary and particular qualities of the springs naturally waned in estimation. The great reliance that was formerly placed upon the cutaneous absorption of the ingredients of mineral baths was shown in many cases to be unfounded by the discovery that comparatively little absorption of saline matter takes place through the uninjured skin. And the fact that widely different medicinal springs have been supposed to exercise the same effect, and are constantly resorted to for the same ailments, was held to show not only the importance of those qualities which waters have in common, but the insignificance of those in which they differ. The proposed nomenclature is therefore not so much an extension of the range of hydrotherapy as a denial of the supposed active qualities of the medicinal spring. I submit, with all deference, that it is founded upon an imperfect and hasty generalisation. Moreover, I would venture to say that hydrotherapy is not the name of a science. It signifies quite correctly an art or treatment. For more than half a century the word has been consistently applied in the medical literature of several languages to the use of sweet water. It would therefore violate an established and convenient usage, and introduce confusion, if it was now sought to employ it so as to include the particular and distinctive properties of the medicinal spring. In a recent letter Dr. Frankenhausen, lecturer in "balneology" at the University of Berlin, writes me: "In Germany, hydrotherapy and balneology are sharply divided departments of medicine. By hydrotherapy we understand the application of hot and cold water. With this is connected thermotherapy, steam, hot air, and incandescent-light baths. By balneotherapy we understand the therapy of mineral waters, in which, as a rule, different temperatures are of small account, but the chemical characters of the waters, climate, diet, &c., are of importance."

MEDICAL HYDROLOGY AND ITS DEFINITION.

By a process of exclusion we are led to the belief that the proper name for the whole science of water and of waters in medicine is *medical hydrology*. For many years the name has been widely employed on the continent of Europe. A literature of medical hydrology, including the whole subject of hydrotherapy and of medicinal springs, has grown up, particularly among the Latin races, and periodical meetings of congresses under this name in different countries have done much to promote and coördinate its study.

It would seem that philology offers no bar to our use of the word in a medical sense. And I venture to submit that the expression *medical hydrology* satisfies the three essential

[1] See Guy Hinsdale in Hydrotherapy, Philadelphia and London, 1910.

conditions with which we set out. That it is distinctive cannot be denied; that it is sufficiently comprehensive is also evident; and it is also, as far as may be, in conformity with international usage. We may, accordingly, define the name as follows: "Medical hydrology is the science of waters, vapours and mineral, or organic deposits in connexion with waters, as used in medicine, both by internal administration, and in the form of baths and applications."

A SHORT CHEMICAL STUDY OF A CASE OF CYCLIC VOMITING, WITH SOME REMARKS ON CREATINURIA AND ACIDOSIS.

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THE patient was a boy aged 6 years. He was admitted to St. Thomas's Hospital on May 21st, 1910, under the care of Dr. C. R. BOX, who was responsible for the clinical conduct of the case and with whose concurrence the investigation was carried out. The patient was discharged on July 18th. According to his mother, he had been liable to attacks of vomiting and great prostration almost every month since his birth. The attacks lasted four or five days and were accompanied by feverishness and constipation. He was not subject to constipation except at these periods.

On admission to hospital the child was restless and fidgety. The movements, however, were not choreiform. He was very pale. The abdomen was poorly covered but moved well on respiration, and no abnormal masses or peristalsis were observed. The liver dulness extended from the sixth rib in the nipple line to the costal margin and the spleen was not palpable. The thoracic viscera showed no abnormality. The knee-jerks were normal and the plantar reflex flexor. The temperature was 98° F., the pulse was 116, and the respirations were 24 per minute. The urine was of specific gravity 1035, acid; it contained no albumin and no sugar; acetone was present; no blood, no pus.

Course of illness.—During the patient's stay of two months in the hospital he had two attacks of illness, the first one lasting from June 1st to 6th, the second from July 2nd to 6th. During the attacks, although vomiting was present, yet it was not a prominent feature. Naturally a nervous child, at the approach of each attack this condition was exaggerated, and he would sit up in bed and nervously move his hands. When the attack was at a climax the patient lay curled up in bed and refused all food. Although between the attacks his temperature remained normal, yet during the attack the temperature varied greatly between normal and 104·5°. At this time the urine was very scanty and measured on one day only 1 oz. It contained much acetone and diacetic acid. He gradually returned to a normal condition on the fourth day from the onset, the temperature oscillations diminishing, and the volume of urine gradually increasing. Gradually, also, the ability to take food returned.

A very prominent point was the extremely rapid loss of weight that occurred during the attacks. For instance, from May 28th to June 4th the child's weight diminished from 2 st. 3 lb. 15 oz. to 2 st. 2 lb. 6 oz.—i.e., 1 lb. 9 oz. Also from July 1st to July 6th the loss was from 2 st. 7 lb. 2 oz. to 2 st. 4 lb. 15 oz.—i.e., 2 lb. 3 oz.

Current Views on Cyclic Vomiting in Children.

From a review of the literature dealing with this subject it is apparent that the cause or causes are very obscure. The physician in his search for a cause has always had one standby in such cases, and that is the presence of an acidosis, involving the excretion in the urine of large quantities of β oxybutyric acid, aceto-acetic acid, and acetone. It is therefore fashionable, since it is also generally accepted that the symptoms of diabetic coma are the results of acidosis, to ascribe attacks of cyclic vomiting to the accumulation in the tissues of large quantities of β oxybutyric acid and aceto-acetic acid. Langmead [1] thinks that the intestinal tract forms some poison which, being absorbed into the portal circulation, acts directly on the liver and so causes a fatty infiltration of that organ with subsequent acid poisoning.

The central point about which Howland and Richards [2] concentrate is the unstable nervous system of a patient liable to this complaint. They regard shock or excitement as sufficient to disturb the whole metabolism, causing diminished power of oxidation and the circulation of the poisonous, unoxidised substances in the blood. The body tries to get rid of them by excretion into the stomach, and intestine, so that vomiting is the eliminating and protective mechanism called into vogue by the body in this condition. They also comment upon the excretion of indol compounds at this period, and show that indol emphasises the poisoning effect of small doses of potassium cyanide.

Ewing [3] regards the condition as depending upon a disturbance of metabolism due to defective function of the liver, with which is related the defective fat combustion, and associated also with poisoning by intestinal putrefactive products.

Comby [4] has alleged a much more definite cause when he ascribes the condition to chronic appendicitis. He describes the cure of eight patients where appendicectomy was performed, while three patients remained uncured by the operation.

A case recently described by Dr. A. E. Russell [5] seems to point to another possible cause in some cases of cyclic vomiting at least. In his patient the post-mortem examination revealed a markedly thickened pylorus, and he ascribes the vomiting to a hypertrophically stenosed orifice. The starvation which must of necessity accompany such a condition would be sufficient to account for the acidosis, while the death of the child he considers as due to inanition and exhaustion. Post-mortem examinations in other cases do not make it evident that a stenosed pylorus is a common cause of this condition, although stenosis of the pylorus due either to spasm or to spasm with muscular hypertrophy is a well-recognised condition in children. Recurrent pyloric spasm may well be a cause of cyclic vomiting in some children, but in the case now recorded it is quite evident from the subsidiary position occupied by the vomiting as well as from the physical signs no such cause would be acceptable as adequately explaining the symptoms. It is remarkable, however, that in the post-mortem examinations of such cases described in the literature gastro-intestinal lesions are frequent. Degeneration of glandular epithelium, small hæmorrhages, and shallow ulcers have been described in cases by Langmead [6]; necrotic changes in the mucous membrane of stomach and intestines by Crozier Griffiths [7]; dilatation of the stomach by Comby, and stenosed pylorus by Russell.

The general trend of opinion is inclined to the belief that cyclic vomiting is due to a deficient oxidation, particularly of fats, with the subsequent accumulation of oxybutyric acid and aceto-acetic acid in the blood and tissues. The acidosis is probably due to the action of intestinal toxins on the liver, while the symptoms themselves may be explained by the acid poisoning. It is one of the objects of this paper to combat this view and to emphasise as strongly as possible that the acidosis in itself had nothing to do with the onset of symptoms, and further, in general, acidosis may probably be disregarded as a cause of any abnormality in any disease, except, it may be, in diabetes.

A Chemical Study of the Patient.

In consequence of the discovery that the child excreted a large quantity of creatin during an attack, whereas a normal child of this age does not excrete creatin at all, a detailed study of the excretion of this substance was made. On the opposite page is given a table of figures obtained in this investigation.

The first prominent point to be noticed in the figures is that the child always excreted creatin. This is an abnormality in a child of 6, although it has been known for many

[1] Langmead: Brit. Med. Jour., Feb. 18th, 1905; Sept. 28th, 1907.

[2] Howland and Richards: Archives of Pediatrics, vol. xxix., 1907, p. 401.

[3] Ewing: Studies from the Department of Pathology, Publications of Cornell University Medical College, vol. viii., 1908.

[4] Comby: Archives de Médecine des Enfants, October, 1909, p. 721.

[5] British Journal of Children's Diseases, February, 1910.

[6] Loc. cit.

[7] Crozier Griffiths: American Journal of Medical Science, vol. cxx, 1900, p. 553

years that infants excrete creatin. It may be inferred, therefore, that the *cause of the recurrent illnesses was always present*, but that only at definite intervals did it rise to such proportions as to disturb many physiological activities. Incidentally, it may be mentioned that the excretion of creatin in the infant which appears to give way to the excretion of creatinin with age, is but one more example of the similarity of ontogenetic and phylogenetic development, for it has been shown by Meissner, and recently confirmed by Noel Paton,[8] that birds always excrete creatin while the mammalia always excrete creatinin.

The next point to be emphasised is the gradual rise of creatin in proportion to creatinin, before the onset of the attack. In fact, as early as June 27th (the attack started on July 2nd) it was evident from the abundance of the creatin brought out in the above table. Unfortunately, none of the bodies β oxybutyric acid, aceto-acetic acid, nor acetone was estimated. Acetone was regularly tested for by Rothera's[9] method, and the intensity of the resulting permanganate colour together with the time of development gave one a rough idea of the relative quantity present.

The first point apparent is that acetonuria did not appear during the period of apparent good health. In this respect acetonuria is totally different from the creatinuria which, as stated above, was always present. The next point is that *acetone only appeared in the urine after the attack had been fully established*. It appears obvious, then, that acidosis is an effect rather than the cause of an attack. That this is the case is also evident from the following. At 3 P.M., July 4th—i.e., during the attack—the boy was given glucose

Table showing Excretion of Creatin in a Case of Cyclic Vomiting.

Date.	Creatinin in 10 c.c.	Creatin in 10 c.c.	Creatinin in 24 hours.	Creatin in 24 hours.	Ratio creatin, creatinin.	Acidosis.	Remarks.
June 4th	mgrm. 8·8	mgrm. 17·2	grm. —	grm. —	1·96	Abundant acetone.	Child ill. Temperature up to 104°.
June 16th	6·0	2·3	—	—	0·38	None.	Child well.
,, 17th	4·6	2·2	—	—	0·48	,,	,,
,, 18th	5·7	2·3	0·234	0·095	0·4	,,	,,
June 20th	9·8	2·3	0·304	0·071	0·235	None.	No temperature. Extra fat for five days.
,, 24th	9·0	3·1	—	—	0·345	,,	Child well.
June 27th	9·0	7·0	0·315	0·245	—	None.	Child well. Normal diet.
,, 28th	7·0	3·9	—	—	0·56	,,	,, ,,
,, 29th	11·0	7·0	0·275	0·150	0·64	,,	,, ,,
July 2nd	4·6	2·6	—	—	0·56	,,	—
July 2nd to 4th	6·0	12·8	0·330	0·700	2·13	Abundant acetone.	Child ill. Only 1 oz. urine July 3rd. At 3 P.M., July 4th, given large quantities of glucose.
,, 5th	7·3	7·2	0·271	0·22	1·00	Acetone diminishing.	Child ill.
,, ,, (12 noon to 3 P.M.)	8·8	4·0			0·45	No acetone.	,,
,, 6th (12 midnight)	11·5	1·25	—	—	0·108	,,	Child recovering.
,, ,, (4.30 A.M.)	10·7	1·0	—	—	0·1	,,	Attack ceased. Temperature normal.
July 7th	6·0	1·2	—	—	0·2	No acetone.	—
July 8th	7·0	1·5	—	—	0·21	No acetone.	From 3 P.M. protein-fat diet for four days.
,, 9th	8·7	3·8	—	—	0·44	Slight acetone.	Child well. No temperature.
,, 11th	8·5	8·7	0·234	0·24	1·0	Abundant acetone for three days.	Child well. Glucose at 3 P.M.
,, 12th	6·5	4·1	—	—	0·63	Abundant acetone.	Specimen before glucose. Child well.
,, 13th (3.30 A.M.)	3·0	1·98	—	—	0·6	Slight acetone.	Specimen 9 hours after glucose.
,, ,, (11 A.M.)	7·8	2·8	—	—	0·36	No acetone.	Specimen 17 hours after glucose.
,, ,, (2 P.M.)	7·8	3·7	—	—	0·47	,,	Child well.
,, ,, (8 P.M.)	14·0	6·0	—	—	0·43	,,	,,
July 14th	6·4	2·45	—	—	0·38	No acetone.	Child well.

excretion that the disturbing factor was approaching a maximum and that an attack was imminent. From the appearance and general condition of the child up to July 1st, it was impossible to imagine the approach of an exacerbation, and my suggestions, based upon the condition of the urine, as to the proximity of illness were not credibly received. It will be noticed, however, that during the height of the attack itself, whereas the creatinin excretion diminished from 0·28 grm. (average) to 0·165 grm. (average) per diem, the creatin excretion became remarkably high—e.g., 0·3 grm. per diem. Here, however, another factor comes in which I shall discuss at greater length later. The factor is the acidosis which accompanies the attack and which in itself is always related to a large excretion of creatin.

It may be well at this point to consider the facts concerning acidosis, involving the excretion of the acetone bodies, (20 grm. to the ounce), together with soda-water, and by 9 A.M. July 5th he had taken 12 oz., which is equivalent to 240 grm. of glucose. The acidosis was stopped almost immediately, and by 3 P.M. July 5th certainly, and probably some hours before, no acetone was present in the urine, whereas the temperature did not return to normal for a further nine hours. Here again, then, there is an apparent independence of acidosis and symptoms. With the disappearance of the acidosis the creatin excretion became markedly lower, the creatinin excretion increased, and the $\frac{\text{creatin}}{\text{creatinin}}$ ratio sank from 2·13 to 0·45.

It still seemed possible that although the accumulation of acid bodies in the tissues was not directly responsible for

[8] Journal of Physiology, vol. xxxix., p. 485, 1909–10.

[9] 5 c.c. urine + 3 grm. of $(NH_4)_2SO_4$ + 3 drops 5 per cent. sodium nitroprusside solution (freshly made) + 2 c.c. ammonia—acetone gives slowly developing permanganate colour.

the onset of symptoms, yet indirectly they might be masters of the situation in that their appearance just upset the balance in a complex which was evidently unstable, and, as is evident from the creatin excretion, was being constantly attacked by other deleterious forces. If this were the case, then acidosis, occurring during a period of quiescence, ought to be followed immediately by an attack of illness. On July 8th glucose and other carbohydrates were taken off the diet, which for the most part consisted of meat, caseinbread, and milk, and this was maintained until July 12th. Considerable quantities of acetone appeared in the urine, together with an increase of creatin, so that the creatin-creatinin ratio rose from 0·2 to 1. But in spite of the acidosis the child was perfectly well, the temperature and all other conditions being quite normal. This is conclusive evidence that acidosis in itself had nothing whatever to do with the symptoms of cyclic vomiting. To apply the term "acid intoxication" to such a condition would then be absolutely wrong and misleading.

One other point was tried. Although acidosis depends upon the absence of, or inability to metabolise, carbohydrates, it really means an incomplete oxidation of fatty acids. Was it possible that the child's power to deal with fatty acids was deficient? To test this he was given cod-liver-oil, and extra quantities of cream and bacon fat were added to his otherwise normal diet. He relished the fat and put on considerable weight at this time, and no acid bodies appeared in the urine. In other words, his power to metabolise fatty acids was perfectly normal so long as there was a sufficiency of glycogen in the liver.

What, then, is the cause of this recurrent vomiting? Unfortunately, the child left the hospital during a quiescent period and so it has been impossible to complete the investigation. From a consideration of the creatin excretion in a great number of pathological conditions (shortly to be published) I feel that the condition depends upon some intoxication in the portal area which is constantly acting. Thinking it might be a bacterial infection, Mr. F. W. Twort of the Brown Institute endeavoured to grow cultures from the child's blood taken during the height of an attack. The results were negative. The urine was also sterile. A positive result would have been interesting, but a negative result does not discredit the theory of a portal infection. In his Harvey lecture of 1906 Herter mentions cases of cyclic vomiting depending upon excessive intestinal putrefaction. I am strongly inclined to connect one of the facts discovered recently by Dale [10] and Barger in their investigations of the physiological actions of amines with this case of cyclic vomiting. They isolated considerable quantities of β-iminazo-ethylamine, the amine from histidine, from the wall of the intestine of the ox, and Dale and Laidlaw showed that this substance produced vomiting and all the poisoning effects of peptone (except altering the coagulability of the blood) and was an extremely potent poison. Quite recently Twort and I have isolated from the contents of the human intestine a bacillus which produces β-iminazo-ethylamine from histidine. An account of this isolation will be published shortly. It seems to me that this case of cyclic vomiting might depend on an excessive formation of this substance or of something of a similar nature in the wall of the intestine. It can be well imagined that an excessive absorption of this substance into the portal circulation would produce many [11] of the symptoms developed in the above-described case.

To sum up:—

1. The child was never normal because he always excreted creatin. The cause of the attacks was always at work.

2. The creatin excretion rose considerably several days before the attack, so that by the estimation of this substance it was possible to predict the onset of symptoms.

3. Acidosis had nothing whatever to do with the attack, but was only an episode like any other symptom. And this for the following reasons: (*a*) the child's power to metabolise fats was quite normal; (*b*) acidosis started after the onset of symptoms and cleared up, on giving glucose, before their abatement; and (*c*) a condition of acidosis for four days in a quiescent period was accompanied by no trace of ill-effect.

4. It is thought that the condition of recurrent vomiting is due to some intestinal intoxication which may or may not depend on bacteria. It is suggested that such a condition might depend upon an accumulation or excessive formation of β-iminazol-ethylamine in the intestinal wall.

[10] See various papers in Journal of Physiology from 1909 onwards.

[11] The effect of injecting β-iminazol-ethylamine into a cat by Dale and Laidlaw showed one great difference from this case of cyclic vomiting—viz., purging as contrasted with constipation.

Creatinuria and Acidosis.

Following upon the introduction of Folin's method of estimating creatin—a method which is easy and accurate—physiological research into creatin and creatinin metabolism has been very active of recent years, although the investigation of the behaviour of these substances under pathological conditions has not yet gained a clinical footing. There can be but little doubt, however, that in the near future they will be regarded as of some importance in diagnosis.

Unfortunately, the physiological part played by creatin and creatinin is still shrouded in mystery, although it appears probable, in view of the concurrence, in the main, of recent investigations, that at least the right line of attack is being followed up. The old theory that when muscle contracts creatin is liberated and converted to creatinin has been entirely given up. In 1908 [12] I endeavoured to show that the liver is the centre about which creatin metabolism plays, and that it would be by concentrating one's attack upon this organ that the problems associated with creatin would be made clear. It seems fair to say that nearly all recent investigators on this subject have taken this view, although, on the other hand, the hypothesis itself which I promulgated as explaining my facts is certainly not sufficient and is probably not correct in its details.

One of the observations which I published was that in cancer of the liver large quantities of creatin appeared in the urine, while in conditions like syphilitic liver, cirrhosis of the liver, and venous engorgement no creatin was excreted. I shall shortly publish further papers on this subject. At the present moment I wish to bring to notice another condition in which creatin is excreted—viz., in correlation with acetone formation, as illustrated by this case of cyclic vomiting. Since all recent work on acidosis indicates that the liver is the main, and probably the only, seat of β-oxybutyric and aceto-acetic acids, it is evident that to establish a constant relation between creatinuria and acidosis will involve an explanation of creatinuria which is associated with abnormal liver metabolism.

It is safe to generalise as regards the condition of acidosis that in such a condition either the body has no carbohydrates or else cannot make use of carbohydrate. Under such conditions the katabolism of fatty acids goes wrong, and with the exc[illegible]on of β-oxybutyric and aceto-acetic acids much of the ene[illegible] of the fatty acids is lost to the body. Various observers have noticed that creatin is sometimes found associated with acetone in urine, but to Cathcart [13] is due the credit of having worked out this subject and shown that absence of carbohydrate from the diet, or inability to use carbohydrate as in diabetes, involves an excretion of creatin. Since acidosis depends on absence of carbohydrate, and since creatinuria also depends on absence of carbohydrate, it seems legitimate to associate creatin with carbohydrate in its normal function in the body. Yet such an inference, I think, would be wrong. This is not the occasion on which I can discuss this matter, but I should just like to point out that the creatin excreted in this case of cyclic vomiting obviously results from *two* causes. In the first place, the child always excretes creatin, even when his carbohydrate and fat metabolism were normal—i.e., at a time when he was quite well, putting on weight quickly, eating a sufficiency of carbohydrate, and excreting no acetone bodies. Secondly, with the appearance of acidosis the creatin excretion was markedly increased, only to diminish greatly on the addition of glucose to the diet. I think one can only generalise to the extent that in both cases the creatin excretion was due to a liver abnormality—in the first case due to the action of some toxin, the potency of which periodically became so pronounced as to make the child very ill, and in the second case depending upon, or only associated with, the aberrant fatty acid metabolism due to lack of glycogen in the liver cells. The question then arises as to whether the cause of creatin excretion in diabetes is identical with that which is associated with the creatin excretion of inanition or deficiency of carbohydrate, or whether some other cause, as in cyclic vomiting, is present. Using an

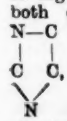
[12] Journal of Physiology, vol. xxxvi., p. 447.

[13] Ibid., vol. xxxix., p. 311.

adequate method of detecting acetone—i.e., Rothera's sodium nitro-prusside reaction—I have been struck by the almost constant appearance of this substance in the urine of diabetic patients, and I think it probable that only one cause—the abnormality of the fat metabolism of the liver depending upon deficient use of carbohydrate—is present in such cases.

From the examination of large numbers of pathological urines, I think it can be safely stated that *all cases of acetonuria are accompanied by creatinuria, while the reverse is certainly not true.* The fact that this relation is not reciprocal should of itself make one hesitate to associate creatin directly with carbohydrate metabolism. Incidentally, I should like to add that the creatinuria of cancer of the liver is not associated with acidosis, although, it may be, of course, if the patient is starving.

Whereas the physiological chemistry of acidosis has rapidly been elucidated by the work of physiologists during the past decade, that of creatin and creatinin stands resistant to all efforts. The distinctive feature about these latter two substances is the methylated nitrogen which might conceivably arise in one of two ways: (1) by destruction of the protein molecule; and (2) by the methylation of the N group of some intermediate product of metabolism. Present knowledge is decidedly against the first explanation, for no methyl-imido (CH_3–NH) group has ever yet been isolated or distinguished in protein. However, the chemistry of the molecular grouping of protein is by no means complete yet, and it would not be surprising if this grouping were discovered. As regards the methylation of the nitrogen atom, it is a well-recognised means adopted by the body for rendering harmful substances innocuous—e.g., tellurium is excreted as methyl telluride; and pyridin is excreted as methyl-pyridyl ammonium hydroxide $OHCH_3$–NC_6H_5. With this idea Jaffé[14] fed rabbits on glycocyamin (guanidin acetic acid) and found, in consequence, that the excretion of creatin (methyl guanidin acetic acid) was increased. I think, however, that these results should be accepted with great caution, for during the experiments the rabbits were ill and developed diarrhœa, and I have noticed that a rabbit with diarrhœa always excretes considerable quantities of creatin. From the methylation point of view, creatin is chemically related to arginin, since they both contain the guanidin grouping $C(=NH)(NH_2)_2$, but the nitrogen of ingested arginin is nearly all excreted as urea. Again, both creatinin and histidin contain the imidazol ring



physiologically related in the body.

With acetonuria, on the other hand, the matter stands very different. Although it seems probable that the formation of acetone itself has no significance, yet it is constantly excreted in acidosis, in amounts which run parallel to the really significant substance β-oxybutyric acid (Gunnar Forssner).[15] Even the normal person can only partially metabolise acetone, whereas ingested β-oxybutyric acid is completely used, so that it is probable that the formation of acetone in acidosis is a chance occurrence of no physiological significance. Its importance lies in the ease with which it is detected. The study of acidosis in diabetes has been the basis of splendid work performed by Baer and Blum, Schwarz, Knoop, Friedmann,[16] and other continental researchers. By noticing the influence of all manner of ingested fatty acids on the excretion of β-oxybutyric acid in diabetics, they have succeeded in elucidating one of the two important known chemical changes which take place in fatty acid katabolism—namely, their oxidation at the β, δ, &c., carbon atoms. Similar work has been done on alkaptonuric patients excreting homogentisic acid, and from this considerable information as to the breaking down of aromatic substances in the body has been gained. All these results have been controlled by Embden,[17] who perfused livers with different acids and estimated the β-oxybutyric acid formed. Although but little of such work has been done in this country, the other side of fatty acid metabolism—namely, the introduction of unsaturated linkages by the liver—has been entirely developed by English workers—Leathes[18] and his collaborators, particularly Hartley,[19] and at Cambridge, Mottram.[20] Gradually are we beginning to see why unsaturated acids like oleic and erucic acids do not increase the acidosis of a diabetic patient, while stearic, palmitic acid, and, better still, butyric acid do so. Also, how a protein molecule can be regarded from an acidosis point of view as being composed of two parts—one part represented by leucine and tyrosine, which on being denitrified increases the excretion of β-oxybutyric acid in the diabetic patient, and the other portion represented by alanine, valine, and glycocoll, which exerts an antiketonic effect, and reduces the β-oxybutyric acid of artificially induced acidosis. From which effect it seems legitimate to assume these latter substances are either built up into a carbohydrate molecule or into some intermediate breakdown product of carbohydrate metabolism.

One other point, and the most important from the clinical point of view—the part played by acidosis in regard to symptoms—remains for brief consideration. Ever since Stadelmann, Naunyn, and Magnus Levy[21] insisted on their importance in diabetic coma, the medical mind has assigned to the presence of β oxybutyric acid and the acetone bodies in the organism an importance which is nothing short of ludicrous. No matter what the symptoms are, if acetone is found in the urine, it appears customary to describe the case as one of acid intoxication. It seems necessary to mention that even in diabetic coma it is by no means a fully settled question whether the symptoms are *directly* due to the acid bodies. The comparative failure of the alkali treatment; the vagarious way in which some diabetic patients excrete large quantities of β-oxybutyric acid for years without symptoms; the absence of any change in the alkalinity of the blood plasma in such patients, whereas in artificial acidosis in animals produced by the ingestion of acids there is a slight but definite decrease in alkalinity; the occurrence of dyspnœic coma in uræmia, and other non-diabetic cases; these points and several others can be urged against the theory of direct relation between the acids formed in diabetes and coma. Besides, the other condition accompanying acidosis—absence of, or inability to use, carbohydrate in the liver—does not appear to have been sufficiently considered as a possible factor in the onset of diabetic coma. Undoubtedly one of the most important functions of the liver is to neutralise poisonous substances which may be either absorbed from the intestine or be formed in the metabolic changes of the body. The excretion of toxic substances such as camphor, chloral, phenol, and skatol, as compounds of glycuronic acid, makes it evident that this "Entgiftung" property of the liver depends to a large extent on carbohydrates. Other evidence in the same direction was obtained by Hildebrandt,[22] who showed that a lethal dose of thymotin piperidide loses its effect if glucose, cane sugar, maltose, or to a less degree levulose, was given at the same time. May it not well be that in all cases of severe symptoms accompanying acidosis, and even in diabetic coma itself, one of the most important factors is the absence of glycogen in the liver cells, with a corresponding diminution in poison-neutralising effect, thus allowing the diffusion of intestinal and toxic substances other than acids throughout the organism? Certainly the method of combating acidosis of conditions other than diabetics by large quantities of glucose seems to me to be more scientific and more likely to lead to beneficial results than the giving of alkalies. By this means one is obviously tackling the condition nearer its source than when simply attempting to neutralise an already fully neutralised series of acids which are probably of no more importance than some of the other known chemical abnormalities

[14] Jaffé: Zeitschrift für Physiologische Chemie, Band xlviii., p. 430, 1906.
[15] Gunnar Forssner: Skandinavisches Archiv für Physiologie, Band xxii., pp. (506) 349.
[16] For a review of the whole subject see article in Ergebnisse der Physiologie, 1910, by Otto Poges.
[17] Embden: Hofmeister's Beiträge, Band viii., p. 121, 1906.
[18] Leathes: See Harvey Lecture for 1909, THE LANCET, vol. i., 1909, p. 593.
[19] Hartley: Journal of Physiology, vol. xxxviii., p. 353.
[20] Mottram: Ibid., vol. xxxviii., p. 281.
[21] See Magnus Levy's article, John Hopkins Bulletin, February, 1911.
[22] Schmiedeberg's: Archiv für Experimentelle Pharmakologie und Pathologie, Bau xliv. .p. 308, 1900.

—such as the presence of creatin—which accompany this condition. For even if the causal connexion between acidosis and diabetic coma is accepted, there can be but little doubt that the acidosis as such, accompanying fever, gastro-enteritis, delayed chloroform poisoning, and cyclic vomiting, and many other conditions, is never of symptomatic significance. In other words, the term acid-intoxication, in the real sense of the word, applied to these conditions is a misnomer. The quantities of β oxybutyric acid and other acetone bodies excreted in these conditions are small—i.e., 10 to 15 grm. at the most—compared with the quantities excreted in diabetes, e.g., one of Magnus Levy's cases excreted 160 grm. per diem, and it is difficult to see how they could possibly produce symptoms. As regards the case above described, it has been seen that acidosis was merely a symptom and had nothing whatever to do with the attacks of cyclic vomiting.

THE PHYSIOLOGICAL IDEAL IN THE ARTIFICIAL FEEDING OF INFANTS.

BY J. SNOWMAN, M.D. BRUX., M.R.C.P. LOND.

IT was said by Oliver Wendell Holmes that a pair of substantial mammary glands have the advantage over the two hemispheres of the most learned professor's brain in the art of compounding a nutritious fluid for infants. Since the enunciation of this aphorism the problem of infant feeding has increased enormously in urgency, but, unfortunately, much of the study devoted to the subject has only served to create difficulties and introduce complexity.

When an infant is submitted to artificial feeding the three most important questions which demand categorical replies concern (1) the quality of the food, (2) its quantity, and (3) the frequency of its administration. For the sake of convenience we will deal first with the two latter questions.

The quantity of food required by a healthy infant is usually ascertained from tables which exist in abundance both in medical and popular literature. These tables are constructed according to age-periods—a method which is physiologically unsound. There is no correspondence between age statistics and nutritional requirements. An infant requires food for purposes of growth, maintenance of body temperature, and as a source of energy for the performance of its vital functions. The amount required varies, not with its age, but with its weight and surface area. It is at once obvious that we cannot rationally satisfy the vital process of two healthy babies according to infant-feeding tables when one weighs 6½ lb. and the other 10 lb. at the same age.

A practical method of adjusting the infant-feeding tables according to weight would be to estimate exactly how much milk healthy infants of varying weights draw from the breast at each feed. The following may be taken as a fair average:—

Weight of infant.	Amount of feed.	Weight of infant.	Amount of feed.
6½ lb.	1½ oz.	15 lb.	4½ ,,
8½ ,,	2½ ,,	17 ,,	5½ ,,
11 ,,	3 ,,	19 ,,	7 ,,
13 ,,	3½ ,,		

As these are the quantities prescribed by Nature they stand in no need of further justification. But we may inquire whether these figures possess any rational significance. The scientific examination of these figures reveals the striking fact that four-fifths of the amount of food consumed by the healthy infant at the maternal breast corresponds precisely to the physical expenditure of the infant, and the other fifth is, therefore, employed in growth. This calculation is arrived at quite simply if we appreciate certain cardinal principles. The most important of these concerns the fact that the combustion of an infant's food within its tissues produces heat. An infant, in proportion to its weight, generates three times as much heat as an adult, because the surface area of an infant is, proportionately to its weight, nearly three times as great as that of an adult. We must be able to estimate the quantity of heat lost before we can assign the amount of food required to cover this loss, and in addition we must, of course, know how much heat the combustion of the food will supply. All these factors have now been accurately measured. Experiment shows that the amount of heat given off per diem by an adult equals 10 calories for every pound of his weight. We have already seen that an infant's loss of heat is thrice that of an adult, comparing weight for weight, therefore 30 calories per pound weight represent an infant's loss of heat. Consequently the average baby, weighing 7 lb. at birth, will lose 210 calories of heat daily. This must be replaced by food of adequate calorific power, and beyond this a supply sufficient for growth must be provided. This additional amount corresponds to one-fifth of the quantity imbibed by a healthy infant from the breast. Therefore the total amount of food required by an infant must represent the value of some 250 calories.

What is the practical value of this apparently theoretical calculation? This is at once realised when we remember that the average baby obtains from the mother within the first fortnight of its existence a daily amount of about 16 oz., and that the total combustion of 16 oz. of human milk produces 250 calories of heat. Thus the remarkable fact is clearly demonstrated that Nature provides for the infant just that sufficiency of food which will make good all its heat loss, and supply in addition an adequate pabulum for growth.

The daily amount of an infant's food bears a constant relation to the frequency of the feeds, because the whole quantity must be divided into portions corresponding to the capacity of the stomach. The amount which an infant's stomach can comfortably contain depends upon its weight; thus in a 7 lb. baby this will be 1½ oz., in a 14 lb. baby it will be 3½ oz. As a 7 lb. baby requires 16 oz. per diem this amount must be subdivided into 11 feeds. A 14 lb. baby consumes about 28 oz. per diem, and therefore eight feeds will be the appropriate number for it. It is noteworthy that the intervals of feeding, as determined in this way, correspond with the rise and fall of the lacteal tide in the human breasts, and that they also correspond with the periods required for the emptying of the infant's stomach.

Having thus seen that Nature's instinctive method of infant-feeding proceeds on a system which is confirmed by the strictest scientific inquiry, we are in a position to apply these principles to the qualitative artificial feeding of infants. If we accept cow's milk as the only practicable substitute for human milk, it would be a very simple matter to compare the caloric value of the two kinds of milk and give that amount of cow's milk which will yield the necessary number of calories. This calculation is very easy because the caloric value of cow's milk is greater than that of human milk in the proportion of 7 to 5. But an infant is not a calorimeter and the arrangement of its artificial diet cannot be conducted on this mathematical plan. The great factor of digestibility must be reckoned with, and this consideration involves an accurate knowledge of the difference in constitution between cow's milk and human milk. Artificial infant-feeding becomes a fine art when cow's milk is so modified as to resemble the constituents of human milk both in kind and in degree. The task is a complex one because a comparison of the analysis of the two milks shows that much readjustment is required. The urgency for this is emphasised by the almost universal experience that cow's milk upsets babies unless it is modified in some way or other.

The problem to be solved is postulated immediately we arrange the analyses of cow's and human milk in juxtaposition. Although these analyses vary from each other they all agree in displaying the essential differences between the two milks. The following analyses may be submitted:—

Cow's milk.					Human milk.				
Casein.	Lact-albumin.	Sugar.	Fat.	Salts.	Casein.	Lact-albumin.	Sugar.	Fat.	Salts.
3	·3	4·4	3·4	·7 (Randnitz)	·6–1	·5	6·4	3·4	·14–·28
2·5–3·7	·5–1	4·4	3·5–4	·6 (Cautley)	·6–1·3	·5–1·2	6–7	3–4	·2
3·25	·75	4	3·5	— (Still)	·6	1·4	7	3·5	—
2·7–3	·2–·3	—	—	— (Bergell)	·8	·6	—	—	—

All authorities agree in ascribing the same percentage of fat to both human and cow's milk. They also agree that human milk contains about 2 per cent. more sugar than cow's milk, and that the latter contains at least three times as many saline constituents as human milk. But there are some variations in regard to the proportional percentages of casein and lactalbumin. Notwithstanding these variations, however, one outstanding fact is brought into bold relief—i.e., that the proteid content of human milk consists very largely of lactalbumin, whereas the proteid of cow's milk is almost entirely casein. As we must credit Nature with the faculty of providing what is physiologically the most appropriate nutriment, it follows that our artificial diet for infants must contain a greater amount of lactalbumin than is present in cow's milk, or in other words, must contain as much lactalbumin as is present in human milk. To realise this is one of the fundamental conditions for success in the artificial feeding of infants, and undoubtedly one of the great causes for failure is the fact that in the milk modification usually recommended this lactalbumin is replaced by casein. The majority of text-books teach that cow's milk should be diluted until its proteid content approximates to the proteid content of human milk. The reason advanced for this is the indigestibility of the casein of cow's milk, but it is obvious that dilution only makes the proteids of cow's milk resemble the proteids of human milk arithmetically but not physiologically. It is not because a milk has a total proteid content equal to human milk that it is suitable for infant-feeding. It might just as well be argued that a milk with a total solid content equal to that of human milk constituted a suitable food for an infant.

The solution of the difficulty involved herein is to be found in correlating the two facts that (1) cow's milk casein is acknowledged as the great obstacle to infantile digestion; and (2) that Nature provides a large proportion of lactalbumin in human milk. Now it is clear that a considerable dilution of cow's milk can reduce its quantity of casein to that of human milk. According to the figures given by most authorities this would require a very much greater dilution than is the usual practice. But it is also clear that no manipulation of cow's milk can render it equal to human milk in lactalbumin content. As the cow's milk is diluted so the lactalbumin begins to vanish, and even if it is not diluted at all it falls far short of the proportion required.

It has, of course, been recognised that this deficiency in lactalbumin is a serious blemish on the customary methods of milk modification. Hitherto there has been one palliative available which consists in diluting the milk with whey—i.e., a solution of lactalbumin, sugar, and salts. The method succeeds in providing nutriment containing as much lactalbumin as cow's milk possesses. The use of whey, however, only meets the difficulty very partially, because, in the first place, it cannot possibly supply Nature's proportion of lactalbumin, and, secondly, the domestic preparation of whey is troublesome, the product is often a decided failure. In addition to this, German observers have lately drawn attention to cases of severe gastro-enteritis accompanied by signs of general intoxication as a result of the use of whey in infant-feeding. Indeed, it has been found that a milk mixture containing the casein of human milk and the whey of cow's milk produced similar results, thus clearly fixing the responsibility on the whey constituent of the mixture.

This line of reasoning enforces the conviction that the addition of pure lactalbumin to the milk mixtures of hand-fed infants is an indispensable requirement in order to guarantee the success of artificial feeding. It is just as illogical to deprive an infant of its lactalbumin as it is to deprive it of its sugar. To supplement the inadequate amount of lactalbumin contained in the usual milk mixtures by an excess of casein is to throw an undue burden on the physiology of gastric digestion. We need but recall the series of changes to which casein is subject in the stomach and intestines before it is absorbed and compare them with the physical ease with which soluble albumin is absorbed to understand that casein can never be an appropriate substitute for lactalbumin.

Modern research, moreover, suggests that it is the abundance of lactalbumin present in human milk which makes its casein digestible, and that cow's milk casein is indigestible because of the paucity of lactalbumin with which it is associated. Consequently, the crucial distinction between the digestibility of cow's milk and human milk rests with the difference in lactalbumin content. The explanation of this circumstance follows from certain experimental investigations made on the physical state of solutions. Attention has been drawn to the condition of "colloidal solution," such as is formed by gelatin, gum, or other "colloid" bodies. A peculiarity of these colloidal solutions is that they cannot be precipitated by an acid, base or salt, but these solutions when dried can be re-dissolved. It has further been shown that many metals—e.g., silver, gold, mercury—can be prepared in the form of colloids, but when these are dissolved the solutions are precipitated by the action of an acid, base or salt. Moreover, these solutions when dried do not re-dissolve. It is obvious, therefore, that there are two classes of colloids with differing physical properties. The former group is known as "reversible colloids," the latter as "irreversible colloids." Further experiment revealed the fact that the addition of a small quantity of solution of gelatin to a solution of colloidal silver protected the latter solution from precipitation, and enabled the solution after drying to become re-dissolved. It is now known as a physical fact that a reversible colloid protects an irreversible colloid from precipitation or coagulation. The importance of all this centres in the circumstance that *casein is an irreversible coagulating colloid*, whereas *lactalbumin is a reversible or protecting colloid*. Human milk thus contains an excess of protective colloid, and therefore its casein forms a fine soft coagulum, in contrast to the firm bulky curd of cow's milk.

Thus there accumulates an abundance of evidence, decisive of the claim for lactalbumin in infant-feeding. As lactalbumin is now procurable in the form of a neutral soluble substance in powder form, there is ample opportunity for its adoption in practice. This substance, termed albulactin, lends itself to a very ready demonstration of its effects if a weak solution be added in a test-tube to pure milk and then acidified with diluted acetic acid, and the result be compared with the contents of a test-tube of pure milk without albulactin to which dilute acetic acid has been added. In the former case the precipitate obtained is soft, flocculent, and consists of minute particles; in the latter case the precipitate is the ordinary thick, firm, and tough curd. Further, if this former precipitate is compared with the result yielded by human milk to which dilute acetic acid has been added they will be absolutely indistinguishable from each other. This, however, is not mere test-tube experimentation, for it is confirmed by clinical experience. Dr. Kamnitzer and Dr. Cassell have recorded a series of cases of infant-feeding wherein this effect of albulactin has been verified by syphoning off the stomach contents during the process of digestion. They compare the material drawn off to small-grained oatmeal soup contrasting very markedly with the thick and dense curd formation which characterises the digestion of cow's milk in the infant's stomach. As collateral evidence one may adduce the observation frequently made by experienced nurses, that the stools of infants taking milk modified with albulactin are practically identical in appearance with those of breast-fed infants.

The amount of albulactin which should be added to the milk mixture in order to secure these physiological benefits should correspond with the amount of lactalbumin present in human milk. Some observers put this as high as 1·4 per cent., others as low as 0·5 per cent., but for practical purposes an addition of 3 grains to each ounce of the milk mixture is perfectly satisfactory. Having made this provision for the supply of the lactalbumin one may dilute the cow's milk so as to reduce the casein in the mixture to the percentage in which it exists in human milk. This is merely a matter of manipulating figures, but in view of the uncertainty of figures and of some recent criticism to which the whole subject of casein has been submitted, it is doubtful whether this extreme reduction in casein content is required.

Professor Budin of Paris claims success for feeding infants on undiluted cow's milk which has been fully sterilised. It is stated that the complete sterilisation alters the casein in such a way as to prevent the formation of tough curds. A new method of feeding in case of gastro-enteritis and toxæmia of infants by means of "casein" milk has lately secured extensive trial in Germany. This milk contains 3·5 per cent. of casein, and only 1–1·5 per cent. of sugar, but the casein is presented in such a way that the development of indigestible curds is prevented. It probably exists in this milk in the form of casein lactate.

From yet another source there comes corroborative evidence

that casein has been unduly incriminated in the production of digestive disturbances in infants. From time immemorial we have been accustomed to scrutinise the stools of infants, and we have pointed to the white masses as testimony of casein indigestion. Some authorities have lately denied the truth of this inference, and maintain that these masses do not consist of casein but of fat. Some analyses are said to have shown that they contain fatty acids and soap only. Other analyses certainly do reveal the presence of proteid, but the suggestion is made that this probably comes from the intestinal secretion. Indeed, Ludwig Meyer states that these so-called casein curds are even found in the stools of infants fed on whey. A keen controversy is in progress in regard to this matter, but it is quite obvious that the truth lies midway between the extreme views of the opponents, for it is well known that casein entangles a large proportion of fat in its meshes as it clots. If the clot happens to be tough, it will resist the action of the digestive juices; the fat in its interior will not be acted on by the pancreatic secretion, and hence the appearance in the stools of more or less unaltered fat. There is no doubt that large curds owe their size to their association with fat. Simple casein curd without any fat is never bulky, neither is it leathery and tenacious.

These observations also direct our attention to the existence of fat indigestion. It would be rash to adopt the view of those who are beginning to ascribe to the fat of cow's milk the main responsibility for infantile indigestion, but we cannot disguise from ourselves the fact that there are important differences between the fat of human milk and of cow's milk. The fat of human milk is comparatively rich in olein, which is an easily digested substance, whereas stearin and palmitin predominate in cow's milk fat, and these require much more digestive effort. The fat of human milk has a higher iodine value than that of cow's milk, and it also possesses a lower melting point. When cream is used to supply deficiency in fat the infant is often provided with some preservative which may prove detrimental. So far we are unaware of any plan to eliminate fat indigestion as has been achieved in the case of casein indigestion. But the very fact that we can banish casein indigestion and permit an infant to feed with impunity on a somewhat larger proportion thereof than Nature dictates, intimates to us that our dilution of the cow's milk need not go so far as to make it unduly poor in fat, and thus there will be no need to add cream to the final mixture. There is reason to believe that an excess of really digestible casein will satisfactorily supplement the deficiency in fat as long as it does not fall below 2 per cent. If the fat is reduced to less than 1 per cent. the infant becomes hungry, notwithstanding an abundance of proteids. It is not possible to be dogmatic on this question of fat in infant feeding, because current scientific opinion thereon is in a state of fluctuation, but it is undoubtedly wrong to assume that the usual mixture containing equal parts of milk and water requires the addition of cream. Provided that the casein in such a mixture is really digestible the addition of cream is in ordinary circumstances quite unnecessary.

The practical outcome of the foregoing remarks resolves itself into a strong claim for a routine milk mixture which consists of equal parts of milk and water, with the addition of three grains of albulactin (lactalbumin) to each ounce of the mixture and of an appropriate quantity of sugar. Although this mixture contains more casein than human milk, this excess is justified by the presence of lactalbumin, which protects it from the formation of tough curds, and it likewise also compensates for the fact that the fat is not up to the human standard in quantity. This mixture of equal parts of milk and water should not be given to infants for the first fortnight; they should be started with 2 parts of water to 1 of milk. The proportion may then be raised to 3 parts of water to 2 of milk, and at the end of the second month the normal healthy infant will be quite prepared to digest equal parts of milk and water, with the appropriate addition of lactalbumin and sugar. The amount of each feed must be regulated according to the weight of the infant, as explained earlier in this paper.

The use of lactalbumin in the artificial feeding of infants is a comparatively new procedure. The recorded observations already made with it convince one that its action in the modification of cow's milk promises to supersede all the other devices which are in vogue for making such milk suitable for infants. When a new-born infant is started upon its career of hand feeding the practitioner is always anxious as to whether the bottle will agree. My own observations have impressed me very firmly with the conviction that these anxieties may be dispelled when the milk is modified with soluble lactalbumin. It gives a sense of security which is otherwise only felt when breast feeding is being employed. Previously in my own practice, if an infant showed any signs of dyspeptic discomfort in its early days of artificial feeding it usually meant that there would be much ringing of the changes before a suitable milk mixture could be found. But after having recourse to milk modification by means of lactalbumin it soon became evident that this method bore the palm, and that it is preferable to and more reliable than the use of citrated milk, peptonised milk, cream and whey feeding, and all other plans which have been adopted to meet the frailty of infantile digestion.

The following instances will illustrate the type of case upon which my view of this method of milk modification has been founded.

CASE 1.—Child born April, 1909. The mother a somewhat elderly primipara, in whom the establishment of lactation took longer than usual. The infant, after struggling in vain with the breasts for three or four days, apparently felt the delusion and disappointment so keenly that it absolutely refused to make any further attempts when the belated milk actually arrived. A milk mixture (1 part cow's milk to 2 of water) was given with all due precaution; this resulted in the production of intense colic and flatulence. The infant cried literally for hours at a stretch, causing a hernia to protrude, and there was vomiting of the usual thick curds. The milk was diluted 1 to 3 and citrate of soda added; the pain appeared to be less; the vomiting continued, but the curds were less dense, and diarrhœa supervened. At the end of the first week the infant had dropped in weight from 7 lb. 2 oz. to 6 lb. 12 oz.; its face indicated distress, and the whole outlook was unpromising, as the greater part of the night was still occupied by the infant's moaning. I then left off the citrate of soda and added 5 grains of albulactin to each ounce-and-a-half feed of cow's milk diluted as before 1 to 3. The most striking effect was the cessation of the colic, for the infant then experienced its first comfortable day, the vomiting followed suit, and the second week registered a gain of 2 oz. In the third week the strength of the milk mixture was increased to 1 to 2, and as development was proceeding apace this strength was progressively increased to equal parts of milk and water, which the infant digested most satisfactorily at the age of 10 weeks, its weight then being 10¼ lb.

CASE 2.—This baby was born in July, 1909, and was the second child of parents whose first child had died a year previously in a convulsive seizure consequent upon digestive disorder. The infant was only of eight months' gestation, but weighed 6 lb. at birth. The mother was unable to suckle and the child was fed from the first with humanised milk delivered to the house in the Soxhlet outfit. On the sixth day there was definite jaundice and then diarrhœa supervened with an eczematous condition of the buttocks. Half-grain doses of grey powder were given daily for three days without improvement, and as the weight had then fallen to 5 lb. 6 oz. a change of food was made to a dilute whey and cream mixture. The diarrhœa certainly diminished, but this mixture was promptly vomited after each feed. During the second week the infant lost another 4 ounces, and a somewhat widespread outbreak of seborrhœa appeared on the fourteenth day. I then fed the infant for two days on a 1 per cent. solution of albulactin with milk sugar, which was well retained. The next step was to fortify this solution with cow's milk, beginning with two teaspoonfuls to the ounce, gradually increasing the quantity of cow's milk, as the mixture appeared to agree perfectly. There were no further symptoms of dyspepsia, and when the child was a month old its weight was again 6 lb. The further progress of the case was excellent, and the child weighed in January, 1911, 14½ lb.

CASE 3.—This infant was 3½ months old when he came under my care in September, 1910. He was being breast-fed, but for the last few weeks the weight had been fluctuating between 10 and 10¼ lb. There were great distress from colic, very frequent sickness, and obstinate constipation. It was clear that this was one of those somewhat rare cases where the mother's milk was not agreeing. A change of diet under these circumstances is often a perilous undertaking, but I ventured, with some confidence, on a mixture consisting of equal parts of cow's milk and water (1½ oz. of each) with the addition of 10 gr. of albulactin to each feed. The result was perfectly gratifying, no further indication of dyspepsia ever manifested itself. The whining and moaning baby became transformed into a picture of contentment, he began to thrive again immediately, and while under observation there was a steady increase in weight of some 4 oz. per week.

To advise a change from human milk to cow's milk is very rarely required in the feeding of infants. It constitutes the exception which emphasises the rule that the breast must dominate in the realms of infant-feeding. No artifice of scientific modification can compare with the human secretion, and if it be true that the composition of milk changes while it is actually being withdrawn by the infant from the breast, so that the fore milk differs in its fat and casein proportions from the subsequent milk, it is evident that "percentage" feeding, calculated with mathematical accuracy, is a fallacious imitation of Nature. No ingenuity of contrivance can provide an infant with a "course" of food of varying composition such as it apparently obtains from the breast. But though it be vain to attempt

to follow Nature to the accuracy of decimal points, it nevertheless does behove us to adhere to the broad principles of imitation. We cannot pretend to maintain these principles as long as we ignore the existence of lactalbumin and act as if it were identical with casein. It is to be hoped that the attention which has been drawn to this anomaly will contribute towards the removal of a serious obstacle in the successful management of infant-feeding. The few cases quoted above only refer to the adoption of lactalbumin modification after other methods had failed, but the ideal in this respect will not be attained until it is recognised that the nutritive function of lactalbumin in milk ought to be given its opportunity long before mischief has set in. On chemical, physiological, and clinical grounds lactalbumin demands a permanent position in all cow's-milk mixtures intended for infant use.

Shoot-up-Hill, N.W.

SUCCESS OR FAILURE IN ELECTRO-THERAPY: A CONSIDERATION OF SOME OF THE CAUSES.[1]

BY SAMUEL SLOAN, M.D. GLASG.,

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THIS is the tenth year since the foundation of the British Electro-Therapeutical Society, the parent of the present Electro-Therapeutical Section of the Royal Society of Medicine, and it seems to me a fitting opportunity to review the progress of electro-therapeutics during that time. Electro-therapy now has no need to fear the sneers of the profession. At the present day it is more in danger of being made the spoilt child of medicine, for it is admitted even by those who are not working in this department that no specialty has made more advance in recent years or is pursued on more strictly scientific lines.

I shall not attempt to give a *résumé* of the general progress of electro-therapeutics since the foundation of our society, but shall confine myself to what is strictly personal, and attempt to give briefly a record of some of the experience I have myself gained during these years, in so far as it may be helpful towards securing success in the future.

If I had been asked, after one year's experience of high-frequency treatment, what I really thought of it I should have had to confess that I had some difficulty in answering the question. My work had not been so successful as I had anticipated. I had not even then realised the possibilities of the treatment. By that time I had acquired so much experience of low-tension currents that I was perhaps hard to please. Now I have no hesitation in saying that I would be seriously handicapped in the struggle with disease without the whole of my electric plant at my command. I have had many failures in the past, but I have endeavoured to make these failures milestones on the road to success, and I am feeling now such an amount of confidence in the therapeutic effects of electric currents that I start treatment in new cases with an assurance of success which I formerly could not have believed possible.

Wherein, then, is this confidence? This is the subject of my paper. In the first place let me emphasise the importance of a correct diagnosis in each case. This does not mean merely determining the name of the disease: it means obtaining a complete grasp of the patient's condition—why is he ill; what prevents him from getting well; what, if any, cause is still in operation? Indeed, I am realising more and more that the successful electro-therapeutist must be first of all a skilled physician with a wide experience of men and women in health and in disease; for it is a diagnosis not of the disease but of the patient which is all-important. Again, many failures in electro-therapy, I feel sure, are due to neglect in the diagnosis, not of the disease but of the cause. Take a case of headache, for instance. How difficult it is we all know to cure many of these even electro-therapeutically, largely because the discovery of the cause so often baffles us. Though there are many causes of headaches, these may for all practical purposes be considered as two only—namely, toxic and ocular. Let this be borne in mind and the cure is much simplified. If toxic, is the sepsis oral, tonsillitic, intestinal, uterine, or urinary? No permanent improvement can be effected till this is determined. Not the headache, therefore, must be treated in these cases, but the sepsis, and, except when the dentist is required, this can usually be to no small extent carried out electrically. If, again, on the removal of the sepsis medicinally or electrically the headache should persist, as is not at all unlikely, whether it be due to cerebral congestion or to peripheral neuritis, we have admirable means in our electric armamentaria to combat it. Oculists inform us that if the headache is ocular only the pain will be found absent on waking in the morning, will come on early in the day, and steadily increase till evening. Toxic headaches, on the other hand, are worst in the morning and get better as the day goes on, owing to the elimination of the toxins by exercise and fresh air. Of course, these two causes may be combined and often are, the headache being present in the early morning and remaining all day. Suitable glasses will at once remove the ocular cause and make the management of the case a more simple matter electrically. The same may be said of insomnia; but here we have a less simple origin. The psychic element enters largely into the etiology of this distressing complaint. Therefore the greater is the importance of a minute inquiry as to the whole life of the patient. Is the cause idleness, alcohol, emotional excess, or undue nerve strain? Once remove the cause or causes, however, and, if sound sleep does not follow, we have an assured means for its cure. At least this is my experience of treatment by faradisation of the brain, and even by auto-condensation.

Again, another cause of failure in electro-therapeutics, besides the failure to detect the cause, is that the electric treatment is begun before the patient is ready for it. He has come for this kind of treatment and will be disappointed if it is not started at once. Some preliminary treatment, however, is usually needed. Or, again, he is too weak or his work is too strenuous, or coming for it would involve an amount of fatigue which might not only prevent it from helping but even make it capable of doing injury. Anything, indeed, which is capable of benefiting in suitable cases, and when suitably administered, is equally capable of injuring under different conditions. This may almost be taken as an axiom, but I fear that in electro-therapy it is too frequently forgotten.

I have referred to the fact that, even after the removal of all the causes of disease, it by no means follows that all the symptoms will disappear. I had a few months ago an illustration of this. A gentleman called upon me for a certificate that he was no longer fit for his occupation. He was, and had been for many years, an accountant in an insurance office, and was finding it impossible to keep his brain in working order. His idea was that an outdoor occupation, such as inspector of agents, was all he was now fit for. I said I was not prepared to agree with him without some investigation of his case. I found upon examination that he was suffering from oral sepsis, gastric disturbance, and general ill-health, and I advised first the removal of all diseased stumps, then a tonic and a fairly long holiday. He felt so much better on his returning in a few weeks that he resumed his old work with the expectation of being able to continue it, but in a very short time his former condition returned and he was quite unable again for any brain-work. I then began the application of faradisation to the brain and promised to make him in a short time perfectly fit for his usual occupation. After a course of this, during which he remained at his ordinary employment, he declared himself quite well and able to manage his work with his former ease. Coming to me afterwards, he said that having been busy of late with the annual balancing of accounts, and having been working for the two previous weeks daily from 9 A.M. to 10 P.M., he was fearing another breakdown. I resumed the treatment for a few days, and so enabled him to tackle successfully the extra work till it was finished. In alcoholic cases, again, there is sure to be failure if treatment is undertaken without a period of probation and preparation. Total abstinence should be enjoined or only small quantities of a light claret or lager beer allowed, with perhaps a mild course of some saline. With these preliminaries a course of electro-therapy may be begun with reasonable expectation of success. Even in serious organic disease, where cure is impossible, I

[1] Read at a meeting of the Electro-therapeutical Section of the Royal Society of Medicine on April 21st, 1911.

have known life prolonged and made happier by judicious electric treatment. A case of malignant disease of the colon, for instance, was so much benefited by dorso-abdominal faradisation as to make the friends wonder if, after all, there had not been an error of diagnosis.

I have spoken of peripheral neuritis when referring to headache, and this is frequently the condition when headache is complained of. There is a tenderness on pressure on one or both temples, and possibly posteriorly also. Here general electric treatment is, I find, of only small avail; but the vacuum electrode, rubbed over the tender parts till a distinct redness results and remains as a burning soreness for an hour or two, will frequently relieve and finally remove the painful condition. Failing this, cocaine ionisation may act like magic. I usually, when the neuritis is over a well-padded region, such as the back or the shoulder, employ the condenser electrode and finish off with the electric vibrator. I suspect that one reason for failure in cases of so-called rheumatic neuritis of the trunk is that the spinal root of the nerve supplying the part is untreated; for, if careful examination be made of the spine, a tender spot will be felt on the affected side, treatment of which as above will go far towards effecting a cure of the pained part. Massage with the condenser electrode will sometimes remove a chronic sciatica when milder electric measures fail. In very chronic cases the massage must be deep and the applications strong. Excellent results may be obtained by fairly vigorous effluve from the high-frequency solenoid applied over the whole of the spine, strong enough to be just short of sparking and for a period of 15 minutes, for pains in the lower limbs and for a very troublesome condition, nocturnal fidgets, which sometimes render sleep impossible.

Even in organic affections of the spinal cord much good may sometimes be effected by electric applications to the spine. I have known a case of spastic paraplegia with exaggerated knee reflexes and marked ankle clonus arrested, although a year of active medicinal treatment and a prolonged holiday had failed, the case continuing to go from bad to worse. The reflexes are now almost normal and the ankle clonus has practically disappeared, whilst the patient is at least as well now as when the disease was first detected. The only electric treatment in this case was 15 minutes' daily application of the effluve to the whole of the spine. Another case, in a woman where the paraplegia had lasted for nine years, has remained well during the past ten years. No one could now suspect that she had ever been paralysed. In this case the treatment was by faradisation between the upper dorsal region and the feet once or twice a week for five months.

The history of auto-condensation since its introduction has been a varied one. I feel sure, from what I hear and read, that it is losing, if it has not already lost, its reputation; and yet no form of treatment is at present giving me more satisfaction. Why is this? I attribute my increasing success in part to my practice of giving smaller doses than formerly, and to the habit of controlling the environment of the patient on the days of administration of the treatment, as well as to the care with which I select my cases.

A common reason for failure in cases which are otherwise doing well is that patients do not allow sufficient time for repose, or at least cessation from strenuous work, before and after each application. The business of having the applications is hurried through. They come for the treatment fatigued perhaps, and they arrange for some important duties as soon as they leave—a dressmaker to see, some shopping to do, or a call to be made. This is fatal. An hour or two of quiet rest, not necessarily of idleness, before each application and the same after it will make an immense difference in the result, unless when merely local conditions are being treated, and often even in such circumstances if the best results are to be obtained. In cases of severe neurasthenia indeed I insist upon absolute rest for an hour or two before and after each application, permitting perfect freedom of action during the rest of the day.

Regarding the question of regulation of dose I usually begin with one of 200 milliampères only. In one or two cases I have started the treatment with a milliampèrage of 100 only, especially where the blood pressure was low and the patient liable to fainting turns. At each after-visit the effect of the previous sitting is ascertained. If exhaustion has followed it a smaller dose is given. If a sense of increased vitality or a comfortable weariness only is reported the original dose is given or a slightly increased one. If upon inquiry the patient reports a busy forenoon, or an expected active time after leaving, less current is administered than was formerly given.

When the treatment is applied daily therefore the time devoted to it is considerable, though the actual application is only of 15 minutes' duration. Where three applications a week are given I permit absolute freedom of action on the alternate days with reasonable avoidance of fatigue. All this may seem trifling and not worth mentioning, but it must not be forgotten that great results are only obtained by attention to trifles; and I have had such good results from auto-condensation when all else, including a prolonged holiday, has failed, that I am inclined to continue my practice. Let me here say that any holiday which can be obtained will be much more pleasant and more profitable after such treatment than before it.

Before leaving the subject of high frequency I should like to draw attention to the beneficial action of local applications, as distinguished from auto-condensation, in gastro-intestinal trouble. For example, the effluve over the abdomen for five or ten minutes before the application of auto-condensation will aid materially. So also will the same applied over the spine behind the arch of the aorta assist in cases of cardiac dilatation. In cases of eczema, when the health has improved and general irritability has been relieved by the auto-condensation, the local condition may remain practically uninfluenced till the vacuum electrode has been applied to the parts in sufficient strength to cause a sense of surface burning, when pruritus will cease and the previous rough red surface will disappear, but usually I find on the parts treated only. I wonder if any of you have observed how nervous a patient may become after about ten minutes of auto-condensation if placed on the couch shortly after a full meal. The best results, I find, are to be obtained shortly before a meal. I suspect that treatment is often withheld because the patient, usually a woman, is terrified of it. I never allow this to influence me where everything else has failed. The dread disappears, the patient's countenance changes, and a previously hopeless invalid is delighted to find herself well again.

I have absolutely failed in the treatment of diabetes and of confirmed obesity with high-frequency currents—failed, that is, in influencing the specific condition. At the same time, if obese people or diabetics are otherwise ill much benefit may be derived from auto-condensation properly applied. In simple glycosuria, on the other hand, the glucose can be made to disappear early in the treatment of the case, especially where it has been observed to come and go according to the condition of health of the patient. Again, in cases of generalised chronic rheumatic arthritis where there is obviously evidence of profound constitutional disturbance of long standing the results have been unsatisfactory. This is what might be expected. In these cases I have tried both high-frequency and ionic medication. If the case is made worse early in the treatment I am more hopeful, though it is difficult to get the patient to see it in that light. A possible reason for non-success may be that the length of the treatment should probably be proportioned to the duration of the disease, and this may prove too irksome to the patient. On the other hand, even a relatively short course of treatment may in time prove beneficial, but as the patient may in the meantime have been lost sight of it may be difficult to obtain knowledge of the final result. A case illustrating this came under my care some years ago. The lady had suffered for 20 years from progressive rheumatoid arthritis, her hands being practically useless. The report at the end of 12 applications of high frequency, local and general, was: "More freedom of movements of arms, but condition of hands and knees unchanged." Three months later the report sent to me was: "Ever so much better, stronger, less pain in joints, and less stiffness." About a year after she called to express her gratitude for the great improvement she then felt. Possibly, therefore, the failure in these cases is less real than at first might appear.

I have heard it said more than once that there are some patients whom electrical treatment in any form disagrees with. I am not prepared to accept such a statement without further details. In such cases I would be inclined to say, Why? when a possible explanation might be forthcoming. This reminds me of the case of a medical friend in the country. He had known of my success in cases of insomnia

when treated by faradisation of the head, and so he had it tried in his own case. The result was such as to make him vow that he would not attempt it a second time. Continuing, however, to suffer, and being so restless from nervous exhaustion that he could not remain at rest in bed, he sent for me in the hope that there might be something in what I had said after all. I took with me an excellent large sliding coil which I had had from Mr. Dean of London, and the current was no sooner applied to the head than the restless movements ceased, and he exclaimed, "Oh! how delightfully soothing." Evidently the first application had been from a small coil, giving therefore a coarse current; for it is not simply the quantity of faradic current but its quality which tells in such cases. Two milliampères can be borne with comfort from such a coil as Dean's, whereas less than one milliampère from an ordinary coil might irritate instead of soothe.

In cases of severe gastric dilatation my experience is that where there is no pyloric obstruction, congenital or acquired, success from electro-therapy may be looked for. Several cases treated by me had a successful result. I shall briefly relate one which came under my care in 1904. The lad had been off work for a year and the stomach had been washed out twice daily for weeks, but this lavage had to be given up on account of pain. Vomiting of sour and frothy material had occurred almost every day. His general condition was such that I decided to try electric treatment for one month only, when if no real improvement resulted he must have gastro-enterostomy performed. I gave him oro-epigastric applications of bi-polar treatment from the high-frequency solenoid, with a spark-gap of 1 mm. in series, which caused rhythmic muscular twitchings extending from the neck to the epigastrium. In a few weeks there was marked improvement. One year later the report given to me was: "Has been working for some months, can eat anything, is stout, and only knows he has a stomach if he gets cold." This is the only form of current which has been successful in my hands in gastric dilatation. One drawback to it is that there is some uncertainty as to the regularity and strength of the muscular movements. Possibly the static-induced current might be as efficient. It could be absolutely relied upon at any rate for regularity and force.

I am sorry to have to report numerous failures in cases of melancholia. Where, however, this is slight and has a definite cause in the patient's mind, especially if it is due to worry and brain fatigue and is accompanied with sleeplessness and general ill-health, and where the asthenia is cerebral more than psychic, success is almost certain. If, on the other hand, the melancholia is irrational, and especially if it is associated with delusions, failure is in my experience just as certain. The removal in such cases of the insomnia seems to have little, if any, influence on the melancholia; and this is notably so where the mental affection has resulted from the loss of a dearly loved husband or wife. In one such instance my advice to the widower to take a new partner in life resulted in a complete cure.

In cases of occupation neuritis I find it safer, if the occupation cannot be temporarily suspended, to give a guarded opinion as to the results of electro-therapy. This is only what might be expected since the cause remains in continued operation. Here I would warn against encouragement at the beginning of treatment of the expectations of nervous optimistic patients, where there may be even justifiable reasons for expecting success. Some necessary patience must be inculcated in these cases, and not too much promised at the start, otherwise possible success may become actual failure through early disappointment.

I have so recently given my experience of electro-therapy as applied to gynæcology that I shall be brief in my reference to this department. I should like to give a warning, however, regarding intra-uterine ionic, or ordinary pelvic galvanic, treatment in cases of disease of one or both ovaries. If the treatment is employed in such cases pain on the part of the patient should be considered as an indication either that too large a current is being employed or that the treatment is in that case unsuitable. I have had cause to regret applying it in such circumstances. In one case I had reason to suspect that intra-uterine high-frequency treatment was the cause of an acute attack of pelvic cellulitis. Since the mere passing of a uterine sound has been known to have such a result, the electric current may not have been accountable in this case; it is difficult indeed to see how it could have been so. I mention the case, however, as a warning.

I have spoken in the early part of my remarks on the importance of correct diagnosis as an aid to success in electro-therapy. Now, I know of no condition more liable to be overlooked, in the case of woman suffering from psychic neurasthenia, than unsuspected, often apparently unimportant if detected, irritable conditions of the vulva. In one case a young woman had been under my care, with only limited success, until I discovered that her mind had for years been unduly concentrated on an irritable condition of the vulva; and it was only when this had received attention that real improvement set in. In another the patient had repeatedly complained of distressing pelvic spasms, which she felt certain were largely the cause of her neurotic condition; but she omitted to mention this to me in her history of her illness. The lady doctor under whose care she had previously been had told her that the vulva was perfectly normal and that the sensations she described to her must be imaginary only. On my first examination of this patient I observed that the vaginal orifice was unduly red compared to the rest of the vulva. Under proper electric treatment this redness disappeared and so did the pelvic spasms, the general health becoming greatly improved as a result. In such cases I find a conical vacuum electrode passed into the vagina an almost certain remedy. In the case of a married lady now under my care long-continued treatment had failed to relieve her of a burning sensation in the vulva. On examination I discovered two minute septic ulcers in the groove at the junction of the hymen with the vulva, too trifling apparently in size to be the cause of much distress. She insisted, however, that this was the situation of the burning. These ulcers disappeared about a week after one application of the galvanic cautery. The burning sensation has greatly diminished; but since it has existed for many years its final disappearance cannot be expected immediately after the removal of the cause, seeing that the general health has been impaired from long years of physical distress and mental anxiety, normal conjugal life having been made impossible owing to the pain resulting. Auto-condensation combined with an ordinary tonic is, however, proving sufficient to restore her nerve tone. As a rule, these vulvar conditions can be detected only by examination in the dorsal position, with a full view of the opened vulva.

The employment of electricity as a sole remedy eliminates all other sources of possible success or possible failure, and makes for education in correct electro-therapy. This is of value in the early practice of the art, but, without doubt, once sufficient experience has been gained, the best results will be obtained by utilising to the full all the resources of the healing art—electrical, medicinal, dietetic, physical, psychic; and he is the most successful physician who has his quiver full of such weapons and who, in cases of difficulty, is fertile in resource.

Glasgow.

A CASE OF TROPH-NEUROTIC ANÆMIA; A SEQUEL.

BY T. WILSON PARRY, M.A., M.D. CANTAB.

AN account of the original attack of this case was published in THE LANCET of Nov. 6th, 1909. I now wish to record two relapses of this case of troph-neurotic anæmia which took place: the first, at an interval of about two months, which ended in a brilliant recovery, in which the blood almost touched its normal state, in response to the same treatment (intramuscular injections of an arylarsonate) which the patient underwent on the first occasion; and a second relapse, which followed about three months after the second recovery and which, for certain reasons, was not suspected till the condition of the blood had passed into an irrecoverable "pernicious" type.

To summarise the case briefly. A lady, 54 years of age, underwent a course of intramuscular injections of para-aminophenylarsonate of sodium from June 30th to August 9th, 1909, 100 grains of this arylarsonate being injected. During this period her hæmoglobin mounted from 65 to 93 per cent.; her red corpuscles from 3,500,000 per cubic millimetre to 4,800,000, and her white corpuscles from 2800 per cubic millimetre to 3250. The polymorphic cells were raised from 34 to 55 per cent., while the mononuclears dropped from 32 to 21 per cent., and the lymphocytes from 34 to 24 per cent. The colour index was 0·9 per cent. on both occasions.

A few poikilocytes, megalocytes, microcytes, and chromaphile granules were found at both examinations, but no normoblasts or megaloblasts could be discovered. The patient left for the seaside, with a nurse, on August 19th, and was progressing most satisfactorily in every way when the nurse left her on the following Sept. 2nd.

On Oct. 16th the patient returned home, with a temperature of 102° F., and I was called in to see her on the evening of the 19th, when her temperature was 101·2°. It appears she had been feeling poorly the past two or three weeks, had lost her appetite, and her legs had begun to ache as they had done at the commencement of her previous attack. For the past eight days she had been unable to walk comfortably on this account, and in the nights she had had profuse perspirations. During these latter days also she had retched a great deal, as had happened in her original attack, but vomited for the first time on Oct. 19th. Her conjunctivæ were again colourless, and she felt faint and giddy when she raised her head from the pillow, but this was not as marked as on the previous occasion. Her skin was of a pale lemon tint, but moist. I could not discover a hæmic murmur. Her pulse was 92, but not as soft as might have been expected; the sphygmomanometer gave 110 mm. Hg. I lost no time in commencing treatment, injecting 2 grains of soamin intramuscularly, morning and evening, on Oct. 20th. These doses I repeated both morning and evening on the 22nd and also on the morning of the 24th, but abstained from giving the injection in the evening of that day as vomiting and diarrhœa with abdominal pain set in and she had also certain ocular symptoms—namely, the feeling that her eyes were too big for their sockets, and when she looked at an object part of it was always replaced either by a dark blur or by an image which appeared "red like fire." This made me feel that this series of symptoms might mean a passing arsenical toxæmia. I accordingly waited a day and a half, and then began with half the previous doses, slowly increasing them to a maximum of 5 grains, which was given in two half doses, on alternate days and then gradually lessened till I finished up with 1 grain a day. The whole period for the injection of the full hundred grains covered 52 days, as compared with the 39 days on the previous occasion. Besides these injections I administered 10 grains of salol twice a day, half an hour before lunch and dinner, as an intestinal antiseptic, and the fresh juice expressed from a pound of raw beef-steak every day. The result was excellent, as will be seen in Table I., which shows the two examinations of the patient's blood made by Dr. Wyatt Wingrave, the first one on Oct. 20th, the day on which I began injecting the arylarsonate, and the second on Dec. 11th, the day after I had injected the hundredth grain.

TABLE I.

	Oct. 20th, 1909.		*Dec. 11th, 1909.*
Hæmoglobin	75 per cent.	.....	95 per cent.
Red corpuscles	4,000,000	.....	4,850,000
White ,,	3,500	.....	4,500
Differential:			
(*a*) Red—			
Poikilocytes	A few.	.....	A few.
Megalocytes	None.	.....	—
Microcytes	A few.	.....	A few.
Chromaphile granules	,,	.....	,,
Normoblasts	None.	.....	None.
Megaloblasts	,,	.....	,,
(*b*) White—			
Polymorphic cells	50 per cent.	.....	74 per cent.
Mononuclear ,,	5 ,,	.....	1 ,,
Lymphocytes	45 ,,	.....	25 ,,
Eosinophiles	0·5 ,,	.....	1·05 ,,
Colour index	0·96 ,,	.....	1·05 ,,
Platelets	Slightly below average.	.....	Numerous (above average).
Bacteria	None.	.....	None.

While the blood on Oct. 20th was not in as poor a condition as it was on June 30th, it can be seen at a glance from the above table that the examination on Dec. 11th demonstrated the fact that the arylarsonate injections had wrought wonders by bringing the blood almost up to its normal character, the only abnormalities being a slight deficiency in hæmoglobin and red corpuscles. The white corpuscles were now normal in number and the lymphocytes had now regained their correct ratio. Coincident with this treatment was a most marked clinical improvement. The patient, who was at first too ill to take note of anything, was got up on to a sofa by an open window on Nov. 1st, was taken out in a bath-chair on Nov. 23rd, and was able to take half-an-hour's walk on Dec. 12th. Hyperacusis, which had been present, disappeared by Nov. 15th, but the eye symptoms did not entirely depart till Nov. 22nd.

The patient went to Eastbourne with a nurse on Jan. 27th, 1910, looking exceedingly well, carrying a slight colour in a usually pale face, and her fingers also had a decidedly pink blush. On Feb. 9th the nurse wrote to say: "Mrs. —— is going on very nicely. Her appetite is very good and she is sleeping much better. She was weighed the day before leaving home and had gained 1 lb. 4 oz. in a fortnight. To-day we found she had just doubled that and had gained 2 lb. 8 oz. since we came here, her weight now being 10 st. 2 lb. 8 oz. without her clothes. In spite of this gain Mrs. —— is taking much more exercise, being out nearly three hours in the morning, and when fine going out in a bath-chair one and a half hours in the afternoon." On Feb. 28th I had further news, telling me that the patient "had been weighed on the 23rd and had gained 2 lb. all but 2 oz., so that is 3 lb. in the last fortnight. She gets very depressed at times, and the last few days fears she is becoming more anæmic; she says she has an exhausted feeling at times and feels a shortness of breath, that she does not enjoy her food so well, and feels slightly sick. I do not think her lips and eyelids are quite so red as when she came here, but apart from that she is taking her food well and sleeping better. I have let her go back this week to taking the meat juice three times in the 24 hours and the Levico water twice a day. She also takes a pint of milk and the meat juice between 7 P.M. dinner and 7 A.M. tea, so that she could not possibly take more than that." The nurse went on to say that she wished to call in a local medical practitioner, but unfortunately the patient, whose nerves were not of the strongest at the best of times, absolutely refused to have anyone called in, or even allow the nurse to communicate with me, as she felt she did not wish to consider herself ill enough to need a medical man. The consequence was that valuable time was lost. When at length she permitted the nurse to have medical help Mr. H. D. Farnell, who was summoned, recognised that a relapse was inevitable and communicated with me at once. I requested that a blood examination should be immediately made, and this was accordingly done by Dr. H. S. Gabbett, whose report will be found below in Column 1 of Table II., showing a sudden alarming deterioration in the condition of the blood since the previous examination on Dec. 11th, 1909.

TABLE II.

	March 12th, 1910.		*March 22nd, 1910*
Hæmoglobin	35 per cent.	.....	—
Red corpuscles	1,750,000	.....	1,600,000
White ,,	2,400	.....	Not counted.
Differential.			
(*a*) Red—			
Poikilocytes	Numerous	.....	—
Megalocytes	,,	.....	—
Megaloblasts, Normoblasts	[Presence of nucleated corpuscles. 10 seen while counting 100 leucocytes, most of them megaloblasts.]		
(*b*) White—			
Polymorphic cells	21 per cent.	.....	25 per cent.
Mononuclear ,, (large)	4 ,,	.....	24 ,,
Lymphocytes	74 ,,	.....	51 ,,
Eosinophiles	1 ,,	.....	—
Platelets	Greatly diminished.	.....	—
Colour index	0·89	.....	—

[If the normal corpuscular count is taken at 5,000,000 the index is 1.]

The result of this examination was most alarming, and one was painfully aware of the fact that it was more than probable that the patient had passed the line from which recovery was possible, as the state of "pernicious anæmia" was now undeniable. The suddenness of this deterioration was all the more amazing considering the degree of excellence the blood had attained on Dec. 11th, when its normal character was within an ace of being reached, and the short time (say about Feb. 20th) that any symptoms indicating a relapse had manifested themselves.

The patient arrived home on March 17th in a greatly

exhausted condition. Two grains of soamin were immediately injected on arrival, salol was administered by the mouth, and oxygen was given freely at intervals. The juice from a pound of raw beef was also given every 24 hours. Thinking that the double return of the hæmolysis might be caused by an intestinal toxæmia of microbic or chemical origin, I asked Sir Almroth Wright to see the case with me. He kindly met me in consultation on March 19th, and was of opinion that such was most probably the case and suggested that the fæces should be examined, the microbes isolated, and each one tested (1) against the patient's blood as to comparative powers of resistance against each of the different microbes discovered; and (2) against a normal "pool" of healthy men's blood. Sir Almroth Wright made an examination of the patient's blood (Table II., Column 2) which showed further deterioration in the red corpuscles in the space of a week. His report was: "Mrs. ——'s red blood corpuscles measured 1½ volumes in 10, instead of 5 volumes in 10. I found also a considerable number of macrocytes which point to a profound disorganisation of the blood-forming apparatus." Referring to the differential count of white blood corpuscles Sir Almroth Wright continues: "These are practically the same as Dr. Gabbett's figures, for the line one draws between large mononuclears and lymphocytes is often an extremely arbitrary line. There was a great reduction in the white blood corpuscles, but I did not count them. The blood picture is, as you see, almost as bad as it could be, and the prognosis is correspondingly bad." He suggested the administration of 15 grains of thymus tablets three times a day to increase the number of white blood corpuscles. The examination of the fæces was kindly done for me by Captain J. Matthews, R.A.M.C., whose report is as follows:—

I found five microbes on lactose bile-salt plates and in sugars they gave—

	Lactose.	Glucose.	Mannite.	Dulcite.	Cane sugar.
No. I.	+	+	+	+	–
,, II.	+	+	+	–	–
,, III.	+	+	+	+	+
,, IV.	+	+	+	+	*+
,, V.	+	+	+	+	–

* Slight gas only.

This makes—

Nos. I. and V. = Bacillus coli communis.
,, III. ,, IV. = Bacillus Friedländer.
No. II. = Bacillus acidi lactici of Hueppe.

The indices were:—

No. I.	0·71	No. IV.	0·79
,, II.	0·46	,, V.	0·90
,, III.	0·76		

I also plated on plain agar to see if there were any undue quantity of streptococci. There were, curiously enough, none, so I do not think streptococcus vaccine is indicated, and if we gave it we should not know what strain to give.

Captain Matthews prepared a vaccine from a culture of the B. acidi lactici of Hueppe, and I injected 2,500,000 at 10 P.M. on March 24th. The specimens of the blood sent Captain Matthews after this injection showed no change. On the evening of March 26th I injected 5,000,000, but it was all of no avail, as the patient sank rapidly, and passed away on the evening of March 30th.

Remarks.—There has been much talk of late concerning the arylarsonates. While one school affirm them to be of inestimable value, another, which has perchance not watched the effects of the drug carefully enough when slight indications presented themselves, so as to make them either reduce the dosage they were giving or to stop the drug entirely for a time, denounces these arylarsonates with a vigour that might give one the impression, had one had no experience with them, that they were both useless and dangerous and should never be employed. This case has taught me one thing, that had it not been for the arylarsonate I used, my patient would have rapidly sunk into a state of irrecoverable pernicious anæmia eight or nine months previously. Though the drug was not curative it was ameliorative, and the happy time spent by the patient each occasion the drug temporarily relieved her deplorable condition only proves to me how great is its true value. We unfortunately at present understand very little about the causes of these obscure anæmias. Had we been able to discover a cause and deal with it effectively it is quite possible that no relapse would have taken place. The picking up of the patient from an anæmic cachexia by the use of intramuscular injections of an arylarsonate I believe to be due to the splendid temporary tonic effect of this drug upon the blood-forming apparatus, possibly through the intervention of the nervous system. It must not be forgotten that nervous shock appeared to be the cause of this anæmia at the outset. I know no other drug that could have taken its place, producing the same result in the same time; so that even if by its use life cannot be saved but can be happily prolonged, that drug surely is of priceless value when used in suitable cases and when handled in a proper manner.

Crouch End Hill, N.

Reviews and Notices of Books.

Human Physiology. By Professor LUIGI LUCIANI, Director of the Physiological Institute of the Royal University of Rome. Translated by FRANCES A. WELBY, and edited by Dr. M. CAMIS, Institute of Physiology, University of Pisa. With a Preface by J. N. LANGLEY, F.R.S., Professor of Physiology in the University of Cambridge. In four volumes. Vol. I.: Circulation and Respiration. With 263 illustrations. London: Macmillan and Co., Limited. 1911. Pp. 592. Price 18*s.* net.

AFTER a short introduction on general physiology and such themes as materialism, neo-vitalism, energetic and psychical monism, pragmatic pluralism, and the general physiology of the cell, the author devotes three chapters, or about 80 pages, to living matter, its chemical and physical basis, its fundamental properties, and the conditions by which it is determined, in this way giving an all-round view of the general physiology of plants and animals. About 60 pages are devoted to the blood, including its formed constituents and blood plasma. In this chapter Cornstein must, we think, be intended for Cohnstein. A method of estimating fibrin-ferment, viz., that of Carbone, is not usually to be found in English text-books. The chapters on blood are very readable, comprehensive, and concise.

One chapter is practically devoted to the discovery of the circulation of the blood. Professor Langley, who has written a preface to the English translation, says: "It will be a shock to many English readers to find that Professor Luciani allots the discovery of the systemic circulation of the blood to his countryman, Cesalpinus"; while he is good enough to say that Harvey's little book of 72 pages is "unmistakably the masterpiece of a man of genius." It should be no shock; the pretence has often been made. That Harvey had forerunners who understood part of the story no one doubts. But Harvey's claim is justified over and over again, and will continue to be accepted.

The chapter on the mechanics of the heart and all that relates to cardiac physiology is one that Professor Luciani is peculiarly fitted to write, for under the guidance of Ludwig he began his classical researches on the beat of the excised heart. It would have been better if the translator had avoided Riolan's phrase, "peri-systole," as used by the author to indicate what we know as the pause—i.e., the resting period of the heart as a whole. The simplicity of the cardiac cycle is further complicated by the introduction of "pre-systole." We are at one with the author that it was Ceradini and not Krehl who introduced the present view regarding the opening and closing of the semilunar valves. Professor Luciani about 40 years ago revived the theory of "diastolic activity" of the heart, and he rejoices to think that Stefani has placed this theory on a firm experimental basis. The reader will find the matter fully set forth in the text. While certain parts of this chapter are very fully elaborated, the important question of the work of the heart is dealt with less fully than in most English text-books. About 50 pages are devoted to the blood stream, of which a concise summary

is given. The well-known apparatus of Marey for demonstrating the effect of intermittent flow of fluid through a rigid and an elastic tube is attributed to Mosso (Fig. 90), although its source is correctly stated in the text. For English readers it might have been well to introduce other forms of sphygmomanometers in addition to those mentioned in the text, and the same might be said of the sphygmograph, which the author asserts has proved "to be of very little diagnostic value." The figure of the plethysmograph of François-Franck (Fig. 115) should be replaced by a more modern form. Sixty pages are given to cardiac muscle and nerves, a subject that the author has largely made his own, and he treats it with a wealth of detail, entering fully into the history and evolution of the nature of the cardiac beat, and discusses in the light of Carlson's experiments on the heart of the king-crab (Limulus) the relative merits of the myogenic and neurogenic theories of the heart-beat. A similar question arises and is discussed in connexion with the *a.v.* bundle. About 30 pages devoted to the vascular muscles and nerves complete the story of the circulation.

The chemistry and physics of respiratory exchanges are clearly and explicitly set forth, including an excellent historical account of this subject. Full justice is done to the work of John Mayow (1640–79) and also to the grand contributions of Spallanzani (1729–99), so important in relation to "internal respiration." A description or figure of a simpler form of gas-pump than that of Pflüger would have been useful. Oxidases are mentioned in the introduction, but we did not find a reference to them in relation to nternal respiration. Under Mechanics of Respiration we failed to find any reference to the recent work of Keith. Sixty pages are devoted to the Nervous Control of Respiratory Rhythm, of which subject a very elaborate and well-illustrated account is given. Fifty pages are given to Lymph and the Interchanges between Blood and the Tissues. There is added in this chapter an account of the Ductless Glands. The indexes of subjects and of the authors cited are good, and to each chapter is added the modern literature of the subject with Recent English Literature collated by Dr. Camis of Pisa. The illustrations are good and well produced.

We offer a hearty welcome to the work of the veteran professor of physiology in Rome, one of the early Italian pupils of Ludwig and the successor of Moleschott. Few men have such an all-round knowledge of physiology as Luigi Luciani or so wide an outlook on physiological problems, both in their modern and in their historical aspects. Moreover, this treatise will introduce to English readers much of the work done by his compatriots, which is none too well known in either England or America. It is rather remarkable that the translation into English of such an all-round comprehensive work should have been so long delayed. All the more, therefore, do we congratulate Miss Welby on the successful manner in which she has performed her work. We wish this and the succeeding volumes every success in their English garb, and we hope that the other three volumes will soon make their appearance.

The Principles and Practice of Modern Otology. By J. F. BARNHILL, M.D., Professor of Otology, Indiana University, &c., and ERNEST DE W. WALES, B.S., M.D., Clinical Professor of Medicine in Indiana University, &c. With 314 original illustrations, many in colour. Second edition. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 598. Price 24*s.* net.

THE opening chapters of the book are devoted to the anatomy and physiology of the temporal bone and auditory apparatus. The third treats of the bacteriology of the ear, and in dealing with this matter a few important points may be worth referring to, especially the differences between the course of otites according to their exciting organisms. Though the pneumococcus is the more rapid in action, it shows a greater inclination to extension than the streptococcus, and at the same time it more often remains latent for a considerable period. The authors sum up their conclusions under 12 headings, which may be read with considerable advantage. The Causation of Ear Disease forms the title of the following chapter, and the next four chapters are devoted to diseases of the external ear. The principal point worthy of notice is the very full description given to its cutaneous disorders. The subsequent eight chapters are devoted to diseases of the external meatus.

Chapter XVII. deals with the methods of examination of the patient, and includes amongst its illustrations the photograph of a room fitted up for that purpose, and in Chapter XVIII. the authors give a very full report of the so-called universal acoumetric formula adopted at the Eighth Otological Congress at Budapest. The nineteenth chapter deals with the influence of nasal and naso-pharyngeal conditions upon the ear, while Chapters XX. to XXIII., inclusive, treat of acute conditions of the middle ear, preceding a chapter on acute mastoiditis and one describing the operations necessary for the treatment of acute suppurative conditions of the mastoid. Five chapters are devoted to chronic purulent otitis media, giving its effects on the mastoid bone and the operations necessary for the relief and cure of chronic suppurative conditions involving the middle ear and mastoid; the next eight chapters deal with the intracranial complications, and the following three with chronic non-suppurative otitis media. The remaining portion of the book is devoted to diseases of the perceptive portion of the hearing apparatus.

This is by far the best American work on otology that has been published for some time, and in their second edition the authors have been able to improve the text materially by the addition of much interesting and essential matter. We recommend this book with all confidence to those interested in otology.

Micro-organisms and Fermentation. By ALFRED JÖRGENSEN, Director of the Laboratory for the Physiology and Technology of Fermentation, Copenhagen. Translated by S. H. DAVIES, M.Sc. Fourth edition, completely revised. London: Charles Griffin and Co. 1911. Pp. 489. Price 15*s.* net.

THERE are probably few who are so well able to deal with the subject of micro-organisms considered in relation to fermentation as the author of this book. He has been associated with the fundamental work of Hansen in the application of micro-biological methods to the brewing industry, and he has himself enriched our knowledge of this and kindred industries by numerous researches of great practical and scientific interest. He has, in addition, been for many years the director of a technical laboratory in which large numbers of students have been trained. As might be expected, therefore, the book bears the impress of first-hand information, and has the interest which attaches to the record of original work. Even the historical portions of the subject gain an air of greater reality when dealt with by an actual worker in the field of research. The book has reached its fourth edition. It was first published in 1886, and has grown to its present size in the attempt to incorporate the numerous researches on the science of fermentation which have appeared since that date. This gradual growth is perhaps responsible for some slight confusion in the arrangement of the subject. For the book must not be considered merely as a technical handbook of the fermentation industries; it takes a wider view than this, though undoubtedly the micro-organisms, their

characters and modifications, are always seen from the standpoint of fermentation activity.

Opening with a review of the methods for the microscopical examination and cultivation of micro-organisms, the author passes on to consider the biological examination of air and water. In this part the work differs from the usual medical bacteriology in that the zymogenic properties are more important than the pathogenic, so that, for instance, in dealing with disinfection various antiseptics are regarded in the light of their suitability for the brewery rather than for the hospital. In the chapter on bacteria, which follows, it is the fermenting organisms with which the work is chiefly concerned, and bacteria are grouped according to their chemical action as lactic acid, acetic acid, and alcohol-forming bacteria without regard to morphology. Those causing beer and wine diseases are naturally regarded as important. The moulds are similarly treated.

As might be expected, about half the book is concerned with the yeasts. Probably to the general reader the most interesting part of the treatise is that which deals with the theories of fermentation and the very full account given of the yeast enzymes. Of more restricted and technical interest is the discussion of the morphology and physiology of various yeasts, but here also there are numerous interesting biological problems dealt with, such as the occurrence of variation, the causes producing it, and the stability of the varieties found. A description of a large number of yeasts is given, and the book ends with a chapter on the industrial application of pure yeast culture. A very full bibliography is furnished, and there is a good index.

The book is of good appearance and is well and accurately printed. It is an indispensable text-book for all who have to deal with the fermentation industries, and is of interest to all bacteriologists.

The Chemistry of Food and Nutrition. By HENRY C. SHERMAN, Ph.D., Professor in Columbia University. New York: The Macmillan Company. 1911. Pp. 357. Price 6*s.* 6*d.* net.

IN this work food is chiefly considered in its nutritive relations, while the detailed description of individual foods and the chemical and legal control of the food industry, we are told, may be treated in a future companion volume. The principles of the chemistry of food and nutrition with special reference to the food requirements of man are set out in the following order. First, the organic foodstuffs are dealt with, carbohydrates, fats, and proteins, much on the usual lines. Next follows an account of the general composition of foods (a very short one) and of the action of ferments, in which the author cites the well-known classification of enzymes, as given by Howell in his text-book. The description of the course of food through the digestive tract occupies about thirty pages. In dealing with the stomach "hormone" or "gastrin"—though this word is not mentioned—the author omits the name of Edkins. The X ray experiments of Cannon are largely drawn on, but there is no reference to the work of Hertz. The account of "the fate of the foodstuffs in metabolism" is excellent as well as suggestive. When dealing with the fuel value of food the work of Atwater is fully presented. Instead of using Rubner's heat-value results obtained on dogs—i.e., for carbohydrates 4·1, fats 9·3, and proteins 4·1 calories—the author uses for carbohydrates 4·1, fats 9·45, and proteins 4·35 calories per gramme as more accurate for man.

There is an interesting chapter on the conditions affecting the total food requirement. Protein metabolism is next fully discussed, and many experiments are quoted from standard authors, and in discussing Chittenden's results the author says "that to maintain nitrogen equilibrium with the full store of protein which is carried on an ordinary diet must necessarily call for a somewhat larger amount of protein than was used in Chittenden's experiments, probably in the neighbourhood of 75 grams of protein per man per day." Food habits and dietary standards are next discussed. Somewhat on the lines adopted by Bunge, nearly 30 pages are devoted to iron in the food and its functions of nutrition, and a similar account is given of inorganic foodstuffs and mineral metabolism—a subject all too frequently forgotten in text-books. A short chapter on Value and Economy of Foods—the prices being given in dollars—ends the text. An appendix of over 20 pages is filled with elaborate composition tables relating to foods.

The book is thoroughly readable, the subject-matter is dealt with in a clear, precise, and easily understood form, and seems to us to embody a trustworthy and not too lengthy account of the great principles of the chemistry of food and nutrition. At the end of each chapter a list of books of reference is given. There are a few misprints: for instance, on p. 95 Chauveau appears as Chaveau.

Vorlesungen über Infektion und Immunität. (*Lectures on Infection and Immunity.*) Von Dr. PAUL TH MÜLLER, a.o. Professor der Hygiene an der Universität Graz. With 21 figures in the text. Third enlarged edition. Jena: Gustav Fischer. Pp. 451. Price, paper, 7 marks; bound, 8 marks.

THE additions constantly being made to our knowledge of the mechanisms of infection and immunity, as well as the complexity of much of the experimental work upon these subjects, render it a matter of considerable difficulty for anyone except an expert bacteriologist to keep abreast of the literature. A book presenting in readable and philosophical manner a review of the main facts concerning these matters, considered from the theoretical as well as from the practical standpoint, should therefore be of undoubted value. In the volume of lectures before us Professor Müller supplies such a book. The nature of infection and of the bodily responses is considered systematically, and the practical applications of the information obtained in relation to these problems are clearly stated. Sufficient details in regard to important experimental work are given to render it intelligible. Facts are clearly differentiated from theoretical considerations, and the discussion of any question that is still the subject of controversy is always critical and dispassionate. The arrangement of the material is also worthy of commendation. Each chapter deals fully with some special aspect of the problems of infection and immunity; authorities are quoted in the text; and in addition a bibliography of each special subject concerned is given.

After a brief introductory chapter the channels of infection are considered, then the nature of bacterial poisons and their distribution and localisation in the body are discussed. Questions of incubation and virulence and of the behaviour of the organisms in the infected areas are next dealt with. The nature and scope of phagocytosis and of the bactericidal and hæmolytic properties of the body fluids are analysed in considerable detail. An interesting chapter is devoted to a discussion of the nature and uses of the opsonins. The views of Sir Almroth Wright are clearly epitomised and critically examined. Professor Müller lays stress upon the difficulties of controlling inoculation by opsonic index determinations, and while admitting that Wright's method gives good results points out that these do not necessarily establish the correctness of his theory of immunity.

Several chapters are devoted to a full examination of active immunisation and the processes underlying it, in so

far as they are at present known. The nature of the various antibodies, the question of their specificity, their relation to variations of temperature, and their seats of origin are all discussed, and the evidence in regard to these problems is simply presented. The nature of the combination between antigens and their corresponding antibodies is next dealt with, and the quantitative relations of these combinations are discussed. A separate chapter is given to a consideration of Ehrlich's researches upon toxins and antitoxins, and the theoretical speculations of both Ehrlich and Arrhenius to explain the facts observed, are critically examined. Professor Müller quotes some observations of his own in this connexion, which he regards as being opposed to the views of Arrhenius. The characters of lysins, such as hæmolysins, bacteriolysins, and cytolysins, and of their corresponding antilysins, are next considered. The nature and mode of action of complement, the relations between it and the immune body, the characters of the receptors and of various antibodies, such as antilysins, anti-amboceptors, anti-complements, and complementoids, are reviewed and illustrated by references to the well-known diagrams of Ehrlich and Morgenroth. Agglutinins and precipitins are considered in similar detail, and then Ehrlich's side-chain theory and recent variants of it are presented and discussed.

The practical applications of the general principles studied are set forth in detail, together with statistical and other reports as to their value. The forms of antitoxic and antibacterial immunity are defined and differentiated, and the general principles underlying the cure and arrest of infective diseases are fully and clearly enunciated. Special chapters are devoted to anaphylaxis and to the practical results of protective inoculation and serum-therapy. The application of immunity reactions to purposes of diagnosis is discussed at considerable length, and all recent methods are included. Professor Müller's book is one we can thoroughly recommend for supplying in a form convenient for referenee a general exposition of all the aspects of immunity and infection.

LIBRARY TABLE.

Outlines of Psychiatry. By WILLIAM A. WHITE, M.D., Superintendent, Government Hospital for the Insane, Washington, D.C. Third edition, revised and enlarged. New York: The Journal of Nervous and Mental Disease Publishing Company. 1911. Pp. 272. Price $2.50.—The student will find in this third edition of Professor White's Psychiatry a compendium of mental disease written from an essentially modernist standpoint. It is thoroughly readable and therefore enjoyable; the author's style is graced with picturesque expressions and at the same time pleasantly free from Americanisms. Chapter VII., on the Principles and Methods of Examination, occupies some 40 pages, and is altogether admirable from the standpoint both of theory and of practice. The adoption of the methods employed by the author cannot fail to be profitable. Mental disorders at best are often obscure enough, and no pains should be spared to throw light from any quarter on their phenomena, hence the necessity of a comprehensive scheme of examination. The book has been written especially for the student, and its excellent qualities will, we feel sure, be appreciated by him.

Science and the Criminal. By C. AINSWORTH MITCHELL. London: Sir Isaac Pitman and Son. 1911. Pp. 240. Price 6*s.*—In this volume some account is given of the manner in which certain scientific discoveries have been utilised to assist the cause of justice. The book is written in a popular manner, and is not in any way intended as a treatise on medical jurisprudence. The principles upon which scientific evidence is based are briefly described, and numerous illustrative cases add interest to the work. The systems of personal identification are discussed, and the uses of photography, anthropometry, and finger-prints are indicated. Numerous trials for poisoning are mentioned, and short accounts are given of the most notable. The identification of human blood and its differentiation from that of animals are described at some length, the precipitin test receiving due notice. The selection of the cases and the manner in which the whole book is written show good judgment, and all unnecessary sensationalism is carefully avoided.

Aids to Memory for First-Aid Students. By L. M. FRANK CHRISTIAN, M.B., C.M. Edin. Fourth edition. Additionally illustrated. London: St. John Ambulance Association. Stockport: Connell and Bailey. Pp. 48. Price 6*d.* net.—One of the best ways of memorising the contents of a book is to make a summary of the information contained in it, and the little book under notice is really a summarised arrangement of first-aid teaching, which can be used either in connexion with a recognised text-book or for class instruction. The notes are arranged under different headings in such a way that the student can easily find a methodical summary of instructions and rules relating to any division of his subject, and both those who have already undergone a course of training and those who are commencing the study of first aid will find the book a practical help; in the one case as a means of refreshing the memory, and in the other as a means of tabulating their knowledge. The illustrations depict actual conditions under which accidents happen. The pictures showing two supposed cases of rescue from contact with live wires are particularly noteworthy, as accidents from this cause are likely to increase with the more general use of electricity, and so far but little attention is paid to this subject in first-aid books.

Recollections of an Irish Doctor. By LOMBE ATTHILL, M.D. Dub. London: The Religious Tract Society. 1911. Pp. 238. Price 2*s.* 6*d.* net.—This is a pleasant, chatty collection of—as Dr. Atthill confesses in his preface—quite unimportant reminiscences. To use his own words, the book "merely narrates incidents in the ordinary life of an ordinary man," but the recollections of one who has lived under five monarchs—namely, George IV., William IV., Victoria, Edward VII., and George V.—are well worth reading by anyone who has not himself reached a great age, for they describe a mode of existence as remote from the present as the days of Elizabeth. Dr. Atthill's descriptions of his early life at home and at school, both in England and in Ireland, are extremely interesting, and although he did not have such thrilling experiences at his Irish school as those described by Trench in his "Realities of Irish Life," yet his account of the sanitary arrangements would cause a modern board of education to hold up its many hands in horror. This was about 1841; and lest we should be suspected of comparing Ireland unfavourably with England we hasten to add that at a much later date neither Winchester nor Eton was conspicuous for either good feeding or proper sanitary conditions. Dr. Atthill's account of the Dublin canal boats are by no means so favourable as those of Mrs. Major O'Dowd, as detailed in "Vanity Fair," but they were evidently a less uncomfortable mode of travelling than the coach, although extremely slow. The value of the book lies in the fact that it gives a modest picture of the life of a man who succeeded in his profession, brought healing and hope to thousands of sufferers, was an honest and true friend, and one who at the beginning of his career had a very uphill battle to fight against adverse circumstances. Apart from his own reminiscences, Dr. Atthill gives us a most interesting account of the foundation of the Rotunda Hospital, of which establishment he became Master in 1875, and into the management and organisation of which he introduced many valuable improvements.

Marriage and Parenthood: The Catholic Ideal. By the Rev. THOMAS J. GERRARD. New York: Joseph F. Wagner. 1911. Pp. 179.—This book—which we must assume is a fair representation of the Roman Catholic viewpoint on the subjects treated, since it bears the imprimatur of the Archbishop of New York—aims to promote and foster those ideals of the home life, the marital relationship, and the responsibility of parenthood, which other Christian communities also consider desirable, but for which the former upholds the indissoluble sacramental idea as the only effective basis. The author, while considering that reticence in regard to the most intimate, the most delicate, and the most sacred marriage relationships is a strong protection against temptation, yet admits that there is some knowledge of sexual subjects that all should have. His chief difficulty has been to decide what must be left out, and he says that what has been retained has been retained by advice of authority. In the practical part of the work it is to be noticed that great attention is paid to the teachings of science, particularly medical science, in such subjects as the choice of a mate, the question of conjugal restraint, the care of the pregnant and parturient woman, and particularly in the chapter on sexual instruction for the young. The time to keep silence and the time to speak is well denoted in the following words: "Knowledge should never be thrust into the child's mind before it is asked for. The state of innocence or ignorance, whichever we like to call it, is better kept untouched as long as possible. To put sexual images into a child's mind before due time is to start a tendency towards precocity and moral depravity. ..... There comes at length a time when the story of the stork and the doctor fails to satisfy. The dawn of a more intelligent interest begins to glimmer. It comes so innocently, so naïvely, that it is just as likely to express itself in the presence of the mother as in the presence of other and older children. That is the mother's opportunity. Then, and not until then, may she give the information."

The author points out that the knowledge sought for is primarily what is meant by being born, rather than how children are begotten. Difficult as the latter subject is, however, if the parents do not speak in due course children will get their first knowledge from undesirable sources and in an undesirable manner. But here, again, more restraint is to be observed than some at the present day are advocating. "There is no need whatever for a full and particular description of the sexual act. Much less is there need of diagrams and pictures of the human body." The lower forms of life are best to start instruction from, but the manner of giving information is more important than the matter. We are decidedly of opinion that the following statement by the author on one moot point puts the essential truth of the matter in a nutshell: "A proposal has been made, and in European countries partly put into practice, to enlighten young minds concerning the many extreme forms of sexual perversion. This instruction I hold to be decidedly pernicious. If the boy is warned against the more common sins he will at once recognise the less common and more heinous ones, if the temptation should arise." We also agree with the author that books dealing with the extreme forms of sexual perversion should not be read even by adults, unless their profession obliges them to deal with such cases.

Faith, Medicine, and the Mind. By CHARLES REINHARDT, M.D. London: The London Publicity Co., Limited. 1911. Pp. 231. Price 5*s.* net.—Readers of that clever collection of stories entitled "In a Glass Darkly" will remember Mr. Lefanu's character, Dr. Hesselius, and his disquisitions upon the inner eye and the methods by which this inner eye may be opened or shut. Dr. Reinhardt, in the book before us, formulates a theory much of the same kind in his explanation of faith healing, telepathy, hypnotism, and similar phenomena. His "psychic sphincter" and "diffused mind" are designed to give a plausible working theory in explanation of phenomena which are at present only very imperfectly understood, but the importance of which increases almost daily. In saying this we must not be taken to mean that we agree with all that Dr. Reinhardt says. Whatever may be the ultimate end of the inquiry into mental processes, conscious or subconscious, Dr. Reinhardt has written an interesting work, and he seems to be both a successful hypnotiser and to have met with extraordinarily sensitive subjects.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLV. Third Series, Vol. VI., Part III. April, 1911. London: Charles Griffin and Co. Annual subscription, 21*s.*, post-free.—The April issue of the *Journal of Anatomy and Physiology* possesses the distinction that an unusually large number of its constituent papers deal with subjects which are of direct utilitarian interest in practical medicine and surgery. The charge that research in human anatomy tends nowadays to be confined to clearing up obscure problems of development or morphology receives direct refutation in the work which appears in this volume, for it is amply demonstrated that the investigation of normal adult anatomy may always take new and useful channels hand in hand with the advances made in the study of its cognate sciences. The injection of alcohol into the divisions of the trigeminal nerve has been the motive for the reinvestigation of the anatomical relations of these trunks by Professor J. Symington. His paper upon the Relations of the Main Divisions of the Trifacial Nerve is a study of the sectional anatomy of the head, carried out in order to provide safe guides for the proper penetration of the nerve trunks by the hypodermic needle. Normal regional anatomy is also dealt with by Mr. F. G. Parsons in his paper on the Form of the Parotid Gland, which is the outcome of the study of the normal form and relations of the formalin-hardened gland. The same author also contributes an article on the Reconstruction of the Norma Facialis and Verticalis of the Skull. The aims of the method adopted are to establish a sufficiency of measurements from a series of fixed points of the skull in order to enable a graphic representation of the skull to be reconstructed and compared with reconstructions of other skulls similarly produced. The simple production of an outline of the most important features of the skull from numerical data is a desideratum, for to most people the study of such a reconstruction yields more information than the study of a mere table of figures; it is the choice of the arbitrary points of measurement that is the problem upon which general agreement is somewhat difficult to obtain. A paper of great interest to the pathologist is that of Professor A. C. Geddes, which deals with the changes undergone by the bones in acromegaly, a subject to which anatomists have devoted much attention of late. Professor Geddes's paper has the great merit that it describes the actual changes in the skeleton of a case whose clinical history has been recorded from the onset of the disease to its fatal termination—a period which covers 25 years. The clinical features of the case have been recorded in the *Edinburgh Medical Journal* by Dr. G. A. Gibson, and the soft tissues are also described in the same journal by Professor Geddes; we therefore possess in these publications a highly detailed account of the progress and ultimate pathological

changes of this remarkable disease. The periodic photographs of the patient, showing the progressive nature of the process, are as striking a series of pictures as could well be imagined; and the detailed reports on the skeleton, which is to find a permanent resting-place in the University of Edinburgh, constitute a record of the inroads of this strange pathological process that cannot fail to be of great value. The same author also contributes notes on Anomalies of the Subclavian Arteries. The subject of the Relation of the Brachial Plexus to the First Rib and to Cervical Ribs has two papers devoted to it. Dr. T. Wingate Todd deals more especially with cervical ribs of surgical importance, and Dr. F. Wood-Jones with a case of rudimentary first ribs studied in relation to the nerve trunks. This subject is one around which an extensive literature is growing, and it is also one of obvious importance to the clinician as well as the pure anatomist. Developmental problems are dealt with by Mr. J. E. S. Frazer, the Pharyngeal End of Rathke's Pouch; and by Dr. R. J. Gladstone, a Case in which the Right Ureter passed behind the Inferior Vena Cava: with a Short Note upon a Case in which the Left Renal Vein passed behind the Abdominal Aorta, and the bearing of these Abnormalities on the Development of the Abdominal Veins. Two papers deal with osteology: Dr. Douglas E. Derry discusses the significance of accessory articular facets between the sacrum and ilium; and Dr. W. L. H. Duckworth describes a skull dredged from the North Sea. A paper on the Lamina Terminalis is contributed by Dr. J. Cameron.

Journal of Laryngology, Rhinology, and Otology. January to June, 1911. London: Adlard and Son. Price £1 per annum.—The articles contained in these numbers which are of special interest are the following:—Partial Petromastoid Excavation with Preservation of the Tympanic Membrane and Ossicles, by Georges Mahu (Paris), in the January number. Reports for the Year 1909 from the Ear and Throat Department of the Royal Infirmary, Edinburgh: A Clinical and Bacteriological Study of 36 Cases of Mastoid Suppuration, including 10 Cases of Intracranial Complication, by Dr. A. Logan Turner and Dr. F. E. Reynolds (with 2 plates), in the February, March, and April numbers. Injuries of the Head and Nasal Diseases, by C. Ziem, in the March number. Report of a case of Thrombosis of the Lateral Sinus Exhibiting Symptoms of Cerebellar Abscess; Operation; Recovery, by Mr. J. Walker Wood; and Fibrolysin in Otology, by Mr. P. M. Yearsley, in the May issue. The June number is unusually full of original matter, an article by Dr. James Adam, entitled "A Note on Turbinal and Sinus Function," being well worthy of study. The *Journal* contains besides these a large number of reports of the various throat and ear societies, with a few abstracts from current literature. This journal has now been handed over to a body of laryngologists and otologists, some 60 in number, who have taken over its control under the management of Dr. P. Watson-Williams.

PRIZES FOR LIFE-SAVING APPARATUS.—In 1907 the Council of the Royal Society of Arts offered certain prizes for the best portable apparatus or appliance for enabling men to undertake rescue work in mines or other places where the air is noxious. These prizes were offered in connexion with the Fothergill Trust, and the Council has now awarded gold medals to Mr. H. A. Fleuss and to Mr. W. E. Garforth, and silver medals to Mr. Richard Jacobson and to the Mining Engineering Company. The report of the committee which investigated the claims of the various applicants for the prizes is printed in the issue of the *Journal of the Royal Society of Arts* for June 16th, and contains some interesting details with regard to the adjudication of the awards.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House up to June 26th:—

	£	s.	d.
Mr. W. Herring	1000	0	0
Messrs. Watts, Watts and Co.	2	0	0
St. John's, Paddington	200	0	0
"Anon."	200	0	0
Mr. Alex. Miller	200	0	0
Westminster Chapel	196	0	0
St. James's, Piccadilly	188	0	0
Mr. Heath Harrison	175	0	0
All Saints', Ennismore-gardens	165	0	0
City Temple	152	0	0
St. Andrew's, Frognal	130	0	0
Emmanuel, Wimbledon	127	0	0
Temple Church	113	0	0
Brixton Independent Church	111	0	0
St. Mary Boltons	105	0	0
Holy Trinity, Sydenham	104	0	0
Sir John Ramsden	100	0	0
Mr. W. D. Graham Menzies	100	0	0
Lieutenant-Colonel More Nisbett	100	0	0
Mrs. Richard Foster	100	0	0
St. Paul's Presbyterian Church, Westbourne-grove	100	0	0
St. James's, Paddington	98	0	0
St. Mark's, Reigate	97	0	0
St. Anne's, Wandsworth	83	0	0
St. Matthew's, Bayswater	79	0	0
St. Mary's, Shortlands	79	0	0
St. Peter's, Bayswater	77	0	0
Roehampton Parish Church	76	0	0
St. Philip's, Kensington	73	0	0
Eltham Churches	70	0	0
Beckenham Parish Church	66	0	0
Annunciation Church, Chislehurst	65	0	0
Christ Church, Beckenham	57	0	0
St. James's, West Hampstead	56	0	0
Christ Church, Newgate-street	55	0	0
Lemsford Parish Church	54	0	0
St. John's, Putney	53	0	0
Messrs. J. H. Vavasseur and Co., Limited	52	0	0
"J. C."	50	0	0
Mrs. C. E. Layton	50	0	0
Mr. G. P. Gooch	50	0	0
Mrs. Gooch	50	0	0
Mr. Norman McCorquodale	50	0	0
Mrs. Kenneth Clark	50	0	0
S. M. G. S.	50	0	0
Miss M. E. Druce	50	0	0
A. B. C.	50	0	0
Carmelite Church, Kensington	50	0	0
St. Paul's, Beckenham	49	0	0
Christ Church, Brondesbury	48	0	0
Chapel Royal, Savoy	47	0	0
St. Magnus's, Lower Thames-street	46	0	0
Chapel Royal, St. James's	44	0	0
Dulwich College Chapel	43	0	0
Farm-street Roman Catholic Church	43	0	0
West Wickham Parish Church	42	0	0
Crouch Hill Presbyterian Church	41	0	0
Clapham Parish Church	41	0	0
St. Augustine's, Highbury	40	0	0
Monken Hadley Parish Church	39	0	0
St. Matthias's, Earl's Court	39	0	0
St. Stephen's, Putney	38	0	0
Fulham Parish Church	36	0	0
Highgate Presbyterian Church	35	0	0
St. Alban's, Holborn	34	0	0
St. Mary's (Old Church), Stoke Newington	33	0	0
Westminster Cathedral	33	0	0
Wellington Barracks Chapel	33	0	0
Old Malden Parish Church	32	0	0
St. Peter's, Clapham	32	0	0
Betchworth Parish Church	32	0	0
Highgate Wesleyan Church	32	0	0
Ilford Parish Church and Missions	31	0	0
Emmanuel, West Hampstead	31	0	0
Christ Church, Victoria-street	30	0	0
Ferme Park Baptist Chapel	30	0	0
Mr. C. W. Drabble	30	0	0
Miss F. Martineau	30	0	0
Christ Church, East Greenwich	30	0	0
St. Mary's, Primrose Hill	29	0	0
St. John's, Sidcup	29	0	0
St. Peter's, Dulwich	28	0	0
St. Mary Magdalene's, Enfield	26	0	0
St. James's, Spanish-place	26	0	0
St. Luke's, Holloway	26	0	0
Mr. H. Dent Brocklehurst	25	0	0
Mr. Otto Beit	25	0	0
Mr. Harold Russell	25	0	0
Mr. Russell D. Walker	25	0	0
Mr. O. S. Fleischmann	25	0	0
Mrs. Christie Miller	25	0	0
Mr. Septimus Vaughan Morgan	25	0	0
Miss Gabriel	25	0	0
Kingswood Parish Church	25	0	0
Effra-road Unitarian Church	25	0	0
Chislehurst Wesleyan Church	25	0	0
St. Matthew's, West Kensington	25	0	0
St. Mary's, Graham-street	24	0	0
Mitcham Parish Church	24	0	0

THE LANCET.

LONDON: SATURDAY, JULY 1, 1911.

The National Insurance Bill.

As is sufficiently shown in that small proportion of the numerous communications which we have received for which we are able to find space in our columns, the general feeling of the medical profession is that the National Insurance Bill in its existing shape is absolutely unsatisfactory; and we have chronicled, as has been done regularly in the daily press, the growth of the feeling among the members of the British Medical Association that the presentation to the Government of what is practically an ultimatum is absolutely necessary in the present position of affairs. The British Medical Association is now inviting every registered medical practitioner to sign an undertaking in the following terms:—

I, the undersigned, hereby undertake that, in the event of the National Insurance Bill becoming law, I will not enter into any agreement for giving medical attendance and treatment to persons insured under the Bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association; and that I will enter into such agreement only through a Local Medical Committee representative of the medical profession in the district in which I practise, and will not enter into any individual or separate agreement with any approved society or other body for the treatment of such persons.

At the same time, the members of the medical profession are asked to attest the following memorial to Parliament:—

(*a*) That Parliament and the Government should postpone dealing with all questions of arrangements with medical practitioners for attendance and treatment of the insured, whether under the head of medical, maternity, or sanatorium benefits, until such terms shall have been arranged as shall afford reasonable assurance that competent medical practitioners will be induced, in the necessary numbers, to enter into those arrangements for treatment of the insured which the proper administration of such benefits would require.

(*b*) That arrangements made under the Bill for medical attendance and treatment of the insured should apply to those persons only whose average income from all sources does not exceed £2 per week.

(*c*) That the Bill should be so amended as to provide that the administration of medical and maternity benefits, like that of sanatorium benefit, shall be placed entirely in the hands of the Local Health Committees, and not of the approved societies.

(*d*) That the Bill should be so amended as to provide that each insured person entitled to medical benefit shall have free choice of doctor from among those medical practitioners practising in the district who are willing to enter into arrangements under the Bill.

(*e*) That the Bill should be so amended as to provide that an adequate number of medical practitioners who have had experience of general practice among the classes from which the insured will chiefly be drawn shall be included amongst the Insurance Commissioners and in the Central Advisory Committee; that the number of medical practitioners on the Local Health Committees should be increased to at least one-fourth of the whole number; and that provision should be made for the constitution, in the district of each Local Health Committee, of a Local Medical Committee, representative of all the registered medical practitioners practising in the district, which Local Medical Committee shall be consulted on all questions of arrangements with registered medical practitioners for attendance upon the insured.

The answer to the invitations of the Association have been very satisfactory.

There is undoubtedly the difficulty in the memorial that it appears to consider the contract system, under which such terrible, almost devastating, abuses have arisen in many parts of the country, necessary to national insurance against sickness, while there is a very large and important section of the medical profession who believe that it is not so necessary, and that the time when the whole of the relations of the medical profession to the public are undergoing rearrangement offers a remarkable opportunity for taking up the position that, in spite of its numerous conveniences, the contract system is inimical to the public interest. Those who think in this manner hold, as we do ourselves, that the conditions of medical practice are sufficiently flexible, and the provisions of the National Insurance Bill sufficiently elastic, to allow the system of payment for work done to be recognised by the Government and adopted by the medical profession, at any rate in such localities where the majority of medical men find it to favour the public interest as well as their own. We cannot see that there is here any immediate parting of the ways—all find the Bill at fault. The statesman-like proceedings in the counsels of the British Medical Association, which have resulted in obtaining a measure of unanimity in favour of the contract system, might well, we think, in future negotiations with the Government be so far extended as to permit of organisations under Local Health Committees whereby the system of payment for work done would be adequately recognised.

But for such a complete readjustment of affairs time will be wanted, just as time will be wanted to ascertain what terms, under any system of contract practice, will secure that a sufficient number of competent medical practitioners can be induced to enter into contracts. The determination which is understood to exist in the mind of the Government to press the Bill through without delay is therefore to all medical men's thinking most unfortunate. Unanimity of feeling in the medical profession, whether particular members are likely or not likely to be affected by the passing of the Bill, is very great in respect of the necessity that the professional relations between medicine and the public should not be turned upside down in a hurry, and the responsibility of the Government in the matter is becoming proportionately heavy. The General Medical Council, which for some years has been seriously uneasy at the increased and increasing shortage of candidates for medical qualification, has adopted a weighty report of a subcommittee of its body, which states that under the Bill the existing relations of the majority of the members of the medical profession to the State and to the public will be profoundly altered. The report also expressed the belief that changes, "whose full effect it is impossible to forecast, will take place in the sanitary and preventive departments of public health administration." We believe that the Council is right, and these serious matters have not been dealt with in the reply of the Chancellor to the Council's report.[1] To very many of our readers the question of the figure at which a capitation fee

[1] THE LANCET, June 3rd, p. 1540, and June 24th, p. 1723.

under the contract system should be placed, or the line under such a system at which a wage limit should be drawn, are matters of the greatest import. Heaven knows we do not minimize the urgency of the threats contained in the Bill against the material prosperity of many of our readers, but we suggest that the risk to which the medical profession will be exposed under the provisions of the Bill, so far as they are outlined, is even greater than is indicated by the apparent intention of the Government to underpay the medical practitioners coöperating in the National Insurance scheme. The risk is that the whole status of the profession of medicine may be hopelessly lowered if too large a proportion of its work is administered at the dictates of lay committees; for on this it will ensue that the supply of candidates for professional qualification will decline in quantity and perhaps quality. It would be a national disaster that this should occur at a time when enormous developments in scientific medicine make it absolutely necessary that the State, through and with the aid of the General Medical Council, should maintain a high standard of medical education, an arduous curriculum, and a drastic system of examinations. We feel that every section of the medical profession will agree in believing that a powerful case has been made out for urging the Government in the strongest and most unmistakable terms to give adequate time to the discussion of these great problems. The powerful and solid resistance to the medical provisions of the Bill, which has been organised along certain lines by the British Medical Association, forms one excellent reason why the Government should take leisure to reconsider the position of the medical profession under the Bill. The growing opposition to the Bill in Ireland forms another. Further reasons will be found in the just apprehension of the General Medical Council and of the great medical corporations that the whole status of medicine, as a scientific profession, may be degraded by a measure which should call for the closest coöperation of scientific medicine. Medical opposition to the Bill is unanimous, and the many and various grounds for the professional attitude require time for their exposition.

The Coronation Ceremonies.

THE Coronation is over and we need not dwell upon the incidents of a gorgeous ceremonial, which was at once impressive with its reminiscence of feudal ceremonies and yet more intimate than anything which we associate as a rule with modern sovereignty. The daily newspapers have done full justice to the scene within the Abbey, to the passage of the KING and QUEEN to and from its portals, and to their prolonged progress on the following day when they passed through Temple Bar, receiving the loyal greetings of the City at the hands of its Lord Mayor, to journey south of the river into streets not familiar with Royal pageants and among people unused to be the direct recipients of Royal smiles. We congratulate King GEORGE and Queen MARY most heartily upon the part which they played during two days, and upon the warmth of the loyal greeting which acclaimed them at every step. The people among whom they passed had assembled in serried lines upon the footways for hours before—some of them since dawn—and they were subjects to be proud of, not less enthusiastic, orderly, and courteous than those who occupied stands and costly seats in the windows of clubs and the façades of palaces. The police, with a caution which was ample, but which it is ungrateful to suggest was exaggerated, had secured safety from all those dangers which are so difficult to eliminate when huge crowds assemble. It has been suggested that the absence throughout of any excessive crushing was due to the apprehensions that had been created by the erection of so many unyielding barriers at different outlets to and from the route. This may have been so, but, as no one can possibly guess either what amount of crowding there might have been or what tragedies might have ensued had no steps been taken to deal with the risks, we find room here for nothing but praise of the police regulations. It is an event of the highest medical importance that such a ceremony as the Coronation, which has stirred the imagination of hundreds of thousands of persons, has taken place with the absolute minimum conceivable of injury, illness, or inconvenience.

The notable absence of accidents and of temporary or serious cases of illness among the spectators both during the Coronation procession and during the Royal progress was principally due to two main causes—firstly, to the precautions above referred to as having been taken by the police, and secondly to the weather. If we say that the latter was practically ideal for such an occasion we are liable to be met by the suggestion that bright sunshine, or at least some more or less protracted gleams of it, would have added considerably to the brilliancy of the spectacle both within and without Westminster Abbey; and if the climatic conditions which greeted Their Majesties on June 22nd and 23rd had resembled those of the preceding week, undoubtedly the pageant would have gained in beauty. But no medical man thinking over the circumstances in which these enormous concourses of persons came together could fail to be glad that such ideal June weather as marked most of May was not granted. For ideal weather for public spectacular display and ideal June weather are not identical. Those who from the safe eminence afforded by stands or windows watched the intervention of the members of the St. John Ambulance Association, and applauded the energy of Boy Scouts or the good-natured sympathy of policemen in the few cases of fainting which gave them occasion to display their willingness to assist, possibly came to the conclusion that the provision for sickness was fully equal to, if not in excess of, the necessities of the day. And so it was, as matters turned out. But if there had been hot sun such as there was during the last week of May and the opening days of June the tale might well have been a different one. The front rows of the crowd at most points of prominent interest were composed of men and women of all ages, many of whom had spent the night at or near the spot where they stood. All had been standing erect in expectancy for three or four hours before the event which they awaited took place and had been the objects of an appreciable degree of pressure from their neighbours. They may not have been without

food or drink, but they certainly had foregone their usual meals in exchange for snacks, taken in circumstances which would hardly be recommended by a medical man. They assuredly had good cause to be thankful that they were not compelled to hold their hard-won places in the brilliant sunshine of a summer morning. Not dozens but hundreds or thousands would have needed the assistance awaiting them if the heat which prevailed till recently had continued but a short time longer, and we need hardly add that troops, police, and all engaged in the exacting duties connected with the ceremonial would have suffered severely. As it was the long processions with protracted standing at attention varied by Royal salutes, were fairly trying for the soldiers who had marched early from their tents in the various parks, and those who watched them must have noted how glad they were to shift their positions and bend their heads when the order to "stand at ease" was followed by "stand easy."

It certainly was an excellent crowd, of a composition which reminded the observer of the changed conditions prevailing in all London throngs, whether they await the opening of pit doors or the passing of Royal processions. Is it the feminine influence which has made itself felt, or have the improved courtesy and forbearance of men of their own social class, and indeed of all classes, rendered it possible for women and young girls, gentle and refined, but at the same time self-reliant and independent, to pass long hours of waiting by night or day on kerbstones and pavements, and to retain their places secure and undisturbed? For anyone who remembers the crowds of a bygone generation, as when Queen VICTORIA celebrated her Jubilee in 1887, or upon minor and earlier occasions, the advance is remarkable. The crowd that witnessed the illuminations in the City and in Piccadilly on Thursday night was in places rather larger and more congested than was agreeable for those who found themselves involved in it, and at times the situation was rendered worse by the senseless rushes made by gangs of stupid lads. There was, however, the same absence of serious accidents that distinguished the proceedings by day, and the same gratifying fact that cases of over-indulgence in alcohol were extremely rare. At eight London police-courts a total of less than 300 charges described as arising out of the Coronation were heard, a large proportion of which were of drunkenness, the majority of the defendants in these being women. On such occasions excitement accounts for a good deal, and those of both sexes who behaved foolishly in their cups were certainly inconspicuous. Here, again, comparison with the "festive" occasions of 20 or more years ago shows a marked improvement in manners in the present generation.

Among those who had good reason to be thankful for the absence of intense heat upon the days of ceremonial were Their Majesties the KING and QUEEN. Theirs, be it remembered, were the leading parts, in fact and not merely in name, in the great ceremonial of their Coronation, parts which they had to sustain for long hours with the eyes of thousands at all times concentrated upon them, watching every gesture, noting eagerly every smile from the moment when they left Buckingham Palace early in the morning of their Coronation Day until their return in the afternoon. They had to support the strain, mental and physical, of a ceremony the solemnity and deep import of which would have rendered it a fatiguing ordeal even if it had not been preceded and followed by the drive at foot's pace amid the ceaseless din of loyal enthusiasm. Royal robes and crowns are not garments of choice by those who would be comfortable. To smile and bow incessantly while facing a restless sea of waving hats and pocket-handkerchiefs, amid ceaseless cheering through a space of more than two hours, is a task all would find hard. We congratulate Their Majesties upon their famous endurance of the physical strain of the Coronation ceremonies, and pray that the vigour of health so publicly demonstrated may be theirs for many long years.

Auto-inoculation in Pulmonary Tuberculosis.

THE doctrine of immunity has had far-reaching results in its applications to the treatment of infections, and has brought new light in regard to many obscure and difficult problems in the pathology of acute and chronic disease processes due to microbial and protozoal agencies. The study of the cellular and humoral responses to sublethal doses of bacteria or their toxins has revealed some of the details of the mechanism by which complex multicellular organisms are enabled to combat these disease-producing agents successfully. It is now generally recognised that these protective processes are capable of destroying the infecting organisms, of limiting their activities to local disturbances, or, if the organisms become generalised, of neutralising their effects and eventually producing a more or less permanent protection in some cases. On the other hand, if the organisms are extremely virulent, or if the protective processes are ineffectively activated, the infection progresses unchecked and death eventually occurs. It is obvious that the bacteria, either directly or through the agency of toxic products, bring into action the protective mechanisms, and that the effective character of these immunising responses is related to the dose and degree of virulence of the infecting organism. The phenomena of chemiotaxis, of phagocytosis, and of the development of the numerous antibodies which have been demonstrated in the blood and tissue fluids, all afford striking evidence of the mutual reactions which occur between the invading agent and the organism it attacks. In experimental infections in animals the infecting dose can be nicely graduated, and the virulence of the organism can be varied so that any condition can be produced, from a slight and strictly localised lesion with no general manifestations, to a condition of profound septicæmia, with generalisation of the bacteria and their products, marked intoxication, and certain death. It is difficult to avoid the conclusion that the similar variations seen in natural infections in man depend upon like conditions, and the theory of auto-inoculation, enunciated by Sir ALMROTH WRIGHT and his collaborators, is based upon these considerations and upon the interesting observations of Dr. J. FREEMAN in regard to the effects of massage upon localised bacterial infections, whereby it was shown that active and passive movements led to variations in the

opsonic index of the patient to the organism concerned These results have been confirmed and extended by numerous observers, so that it would appear as if any condition tending to alter the local vascular supply, such as massage, active and passive movements, the induction of hyperæmia by BIER'S method, and the administration of the X rays, may all lead to an increased discharge of bacteria or their products from the local lesion into the general blood stream, and therefore be said to produce auto-inoculation. According to Sir ALMROTH WRIGHT, the different effects of bacterial infections may be satisfactorily explained on this theory. He suggests that generalised infections are characterised by frequent or even continuous auto-inoculations, that strictly localised infections do not give rise to them at all, while that in a third class, in which the infection is more or less localised, occasional auto-inoculations occur depending upon variations in the local blood- and lymph-supply.

Treatment by means of bacterial vaccines is an attempt to utilise the information at present available in regard to the nature of immunity by the administration of graduated doses of bacterial products with a view to increasing the production of antibodies. The work of Sir ALMROTH WRIGHT has served to extend widely the use of vaccines and to afford an intelligible explanation of their action, while determinations of the opsonic index supply in some degree a means of measuring the immunising responses evoked. It is of interest to note that the determination of the opsonic index of the blood before and after massage of an infected area has shown that the immunising responses, induced by the auto-inoculations thus set up, are strictly comparable to those obtained by inoculation with bacterial vaccines prepared from the organism concerned, and that the results of such auto-inoculations may be beneficial or harmful according to their degree. It is not surprising, therefore, that attempts have been made to control auto-inoculations with a view to treatment—in other words, to utilise the patient's own bacterial products rather than to inject others obtained outside the body. We have received a copy of a thoughtful, suggestive, and original book by Dr. M. S. PATERSON,[1] in which this question is discussed in regard to the treatment of pulmonary tuberculosis by rest and graduated labour. It is of interest to note that Dr. PATERSON worked out his scheme of treatment before he was aware of the theory of auto-inoculation, and that his championship of this depends upon the explanation it affords of the results he has obtained. He describes how he conceived the idea of putting patients to do work involving the use of the upper limbs as well as the lower, supposing that this might possibly exert a more direct influence upon the lungs. He found that suitable patients could perform the hardest manual work with improvement in their general condition and weight, with a decrease in the quantity of sputum, and without the occurrence of hæmoptysis. He then observed that some patients who made no progress on lighter work showed marked improvement when put upon a harder grade, and also that some patients who had slightly over-exerted themselves and developed a small rise of temperature were subsequently none the worse; indeed, they were sometimes much better and were able to resume the same grade of work without ill-effect. It was also found in the case of certain patients, who over-exerted themselves considerably against advice, that headache, fever, loss of appetite, and sometimes pleurisy resulted. On learning from Dr. A. C. INMAN of the theory of auto-inoculation Dr. PATERSON applied it to these results, and after numerous determinations of the opsonic index of the blood of his patients by Dr. INMAN, they came to the conclusions that physical exercise induced auto-inoculations, and that systematic graduation of exercise regulated and controlled the extent of these auto-inoculations. Dr. PATERSON now gauges the progress made by his patients by a careful study of the temperature, the sputum, the patient's own feelings and appetite, and by the body-weight, and he gives as his aims of treatment the raising of the patient to his normal or highest known weight, and the elevation of his specific resisting power to such a degree that he can perform the hardest work without the risk of introducing a dose of bacterial products into the blood large enough to produce constitutional disturbance. The control of the auto-inoculations is therefore one of the great objects of the rational treatment of pulmonary tuberculosis, if the theory of auto-inoculation is accepted as the explanation of the phenomena of the disease and of the effects of rest and exercise. In febrile cases the auto-inoculations are excessive, and must be reduced by appropriate means.

Dr. PATERSON maintains that the most effective and most rapid method of securing this object is by what he has termed complete immobilisation, which consists in absolute rest in bed, the patient being treated like a case of enteric fever, except in the matter of diet. He is not allowed to move in bed, to read, to wash himself, to cut up his food, or to go to the lavatory, while every means is employed to lessen ineffective or unnecessary coughing. Interesting charts are shown in the book illustrating the effects of some of these movements upon the temperature. In afebrile and localised cases, and in cases in which the excessive auto-inoculations have been controlled the inducement of effective auto-inoculation by graduated exercise is the principal factor in treatment. With this object in view Dr. PATERSON has elaborated at the Brompton Hospital Sanatorium at Frimley, where his observations have been carried out, six grades of labour, with a preliminary period of walking exercise. He gives details of these grades and of the various guides for determining when a patient shall be changed from one grade to another. He pays particular attention to the temperature chart and believes that a temperature of 99° F. in a man or of 99·6° in a woman, accompanied by headache and loss of appetite, are indications of over-inoculation. These patients, after a few days of complete immobilisation, can often return to the grade which caused the over-inoculation without difficulty. Some patients have to pass through several grades before they obtain effective auto-inoculations, and this is the explanation offered of the observation previously mentioned—that some patients who make no progress on light work advance satisfactorily

[1] Auto-Inoculation in Pulmonary Tuberculosis. By M. S. Paterson, M.B., B.S., M.R.C.S., L.R.C.P., Medical Superintendent at Brompton Hospital Sanatorium, Frimley, &c. London: James Nisbet and Co. 1911. Pp. 236.

when put upon a harder grade. Dr. PATERSON'S suggestions and his explanations of his results are of great interest and are worthy of careful consideration. The system of graduated labour as applied to the treatment of pulmonary tuberculosis has many obvious advantages: it tends to improve the physical condition of the patient, and to render him ready for work directly he is discharged with his disease arrested; moreover, it brings a more definite interest into the treatment than where the only exercises prescribed are graduated walks. The theory of auto-inoculation must, of course, be regarded only as a working hypothesis, but Dr. PATERSON'S interesting observations, although not a direct outcome of this theory, lend considerable support to it, and should serve to encourage the application of similar methods to other infections. We congratulate him upon his work.

Annotations.

"Ne quid nimis."

IMPROVEMENTS IN THE NAVAL MEDICAL SERVICE.

WE understand that the recommendations of the Committee on the Naval Medical Service, which has been presided over by Vice-Admiral Sir John Durnford, have been accepted by the authorities practically in their entirety. Under the new conditions of service the inducements to young medical men to join will be distinctly greater. There are increases of pay in certain directions, provision is made for acceleration of promotion in response to good and scientific work, and the facilities for post-graduate study are multiplied. The projected reforms affect also Queen Alexandra's Royal Naval Nursing Service, where the age of entry has been raised and the rates of pay increased, and the Sick Berth Staff, where alterations for the better have been made in training, and where special allowances will be granted for the discharge of exceptional duties. We desire to bring this information prominently before those of our readers who are connected with medical schools, for they will find in the report when it is issued many reasons for suggesting to young qualified men that the career of the naval medical officer contains excellent opportunities.

HOSPITAL SATURDAY FUND: A CORONATION APPEAL.

"IN view of the Coronation, and having regard to the fact that His Majesty has recently become Patron of the Hospital Saturday Fund, the time is felt to be opportune for a special appeal on behalf of the work which that Fund is doing amongst the hospitals of London." These opening words of a circular letter signed by Sir Savile Crossley and Mr. A. W. Davis, respectively chairman and secretary of the Fund, will probably meet with a good response. The great interest which His Majesty has always evinced in the hospitals is well known, and Coronation year could not be more fittingly commemorated by the charitable than by increased provision being made for the ever-growing needs of hospital work. The suggestion in the circular was that those who now contribute regularly to the Hospital Saturday Fund should double their weekly contributions in Coronation week as a special offering. We join Sir Savile Crossley and Mr. Davis in cordially commending the idea to contributors, and remind them that though Coronation week has passed the opportunity for generosity remains.

SCIENTIFIC RESEARCH FOR THE LOCAL GOVERNMENT BOARD.

THE President of the Local Government Board has authorised the following special researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease:—

1. A research into the causes of premature arterial degeneration in man, by Dr. F. W. Andrewes, pathologist to St. Bartholomew's Hospital.
2. An inquiry by Dr. J. H. Thursfield, of St. Bartholomew's Hospital, into the causes of death in measles.
3. A comparison by Professor Nuttall, F.R.S., Quick Professor of Biology at the University of Cambridge, of the number and kind of fleas found on rats.
4. A continuation by Dr. C. J. Lewis, of Birmingham University, of his investigation into the degree of prevalence and the characteristics of micro-organisms known as non-lactose fermenters in the alimentary canal of infants.
5. An investigation into the same subject by Dr. D. M. Alexander, of Liverpool University.
6. An inquiry by Dr. Graham Smith, of Cambridge University, into the incidence of non-lactose fermenters in flies in normal surroundings and in surroundings associated with epidemic diarrhœa.
7. A study by Dr. F. A. Bainbridge, of the Lister Institute, of the anaërobic bacteria in the alimentary canal of infants.
8. An investigation by Dr. Graham Smith into the possibility of pathogenic micro-organisms being taken up by the larva and subsequently distributed by the fly.

TUBERCULOUS BURSITIS.

TUBERCULOUS bursitis has not received much attention In the *Johns Hopkins Hospital Bulletin* for May Dr. Sydney M. Cone has described two interesting cases. A man, aged 22 years, was admitted into hospital complaining of pain in, and loss of function of, the right shoulder. He had always been strong and healthy, and there was no family history of tuberculosis. For about three years the right shoulder had been stiff on getting up in the morning, but this wore off after he had worked. For the past three months the shoulder had been constantly painful. The pain was increased on movement and prevented him from working. Examination showed fulness of the shoulder, especially over the coracoid process, and crepitus was felt in front of the joint. There was localised tenderness at the acromion process. He could not raise the arm or place it behind him because of the pain. Radiography showed rarefaction over the tuberosity of the humerus and slight roughening there as well as at the upper part of the glenoid fossa. Two milligrammes of tuberculin were injected subcutaneously and produced a reaction locally, focally, and generally. At the site of the injection there were swelling, tenderness, and redness. On the following day there was pain in the shoulder and the temperature rose to 100° F. On August 2nd, 1909, an incision was made from the acromion process outwards and downwards towards the deltoid insertion. The deltoid muscle was divided and a thick grey sac was exposed by blunt dissection. As there was difficulty in removing the sac in consequence of adhesions it was incised and about 400 facetted bodies shot out with a thin serous fluid. The sac was then removed without difficulty. An incision was made into the joint at the point of greatest adhesion near the tuberosity. The joint was found to be normal. The muscle was sutured, the wound was closed, and union took place by first intention. On Sept. 8th he was readmitted with a sinus in the line of incision. This closed under treatment, but others formed. On Jan. 24th, 1910, the apices of both lungs

were found to be tuberculous. He was sent to the country. He there improved much, and on Oct. 15th the sinuses had all closed and he was able to use his arm. The sac measured 11 by 6 by 3 centimetres. Its wall varied in thickness from 3 millimetres to 1½ centimetres and was grey with pinkish areas throughout; there were some nodular areas. Sections from many portions of the sac showed typical tuberculosis—dense fibrous tissue containing areas of small round cells, epithelial cells, giant cells, and caseation. In places there were single and conglomerate tubercles. The facetted bodies were found on microscopic examination to consist of granular loculated material staining with Weigert's fibrin stain and showing flakes, granules, and strands. Tubercle bacilli were found by the Ziehl-Neelsen stain. In the second case, a man, aged 24 years, came under observation on Feb. 18th, 1910. He had had a swelling over his left patella for several years which gave him no trouble. On Nov. 27th, 1909, he fell on the knee, and two days later it began to be painful. He was well developed and otherwise normal except for a tuberculous focus at the apex of the right lung. The left knee was tender, and larger and warmer than the right. Over the patella was an elastic lump of the size of a hickory nut, freely moveable under the skin. The tuberculin test was positive. The knee was opened and pinkish-yellow tags were removed. After closing the joint the prepatellar bursa, which formed a dense fibrous mass, was excised. The wounds were closed. An active tuberculous process developed in the joint and surrounding tissues, necessitating amputation. The prepatellar bursa formed a solid glistening white mass, which cut with difficulty and showed greyish softer areas here and there. Microscopically it showed islands of small round cells, epithelioid and giant cells, and caseous areas. The material removed from the joint showed active tuberculosis. These cases illustrate the two types of tuberculous bursæ which have been described in recent years by continental writers, one containing rice bodies and the other of a sclerosing form.

THROMBOSIS OF THE SUBCLAVIAN VEIN IN MEASLES.

IN the *Glasgow Medical Journal* for March Dr. A. J. Couper has reported a case of a very rare complication of measles—thrombosis of the subclavian vein. A well-nourished but flabby boy, aged 18 months, had measles. The heart sounds were soft and the pulse was of low tension. Mucous râles were heard over the lungs. The rash faded on the fifth day, but the temperature, previously normal, rose to 102° F. During the next three days it fell to normal. On the sixteenth day the temperature again rose to 102°, the pulse to 136, and the respirations to 44. On the following day the temperature was 97·6°, and the dorsum of the right hand was swollen, but the circulation in the part was good, and there was no pain. On the next day the swelling was much increased, involving the palm and extending up the wrist. The circulation in the fingers was sluggish, and the terminal phalanges were cyanosed. On the nineteenth day the whole of the right arm and the inner wall of the axilla were œdematous and very tense. The limb was cold and mottled with purple, and the ends of the fingers were black. Crepitant râles were heard at both bases posteriorly, but there was no dulness. On the twentieth day the swelling was still further increased, the limb and inner wall of the axilla had assumed a much deeper and more uniform colour, and there were numerous bullæ containing sero-sanguinolent fluid. The child died on the following day. At the necropsy the right arm was found swollen to about twice the size of the left. It was of a purple colour, which was most marked towards the distal extremity. The inner wall of the axilla was livid and swollen. On incision the subcutaneous tissue was found to be very œdematous. The axillary and subclavian veins were engorged. In the subclavian, about half an inch from its proximal end, was a firm adherent clot which extended for an inch backwards. Attempts to grow cultures from the clot failed. There were numerous enlarged axillary glands, but none were caseous or impinging on the vein. During life the swelling of the hand and the flabby heart caused thrombosis to be suspected. The involvement of the axilla indicated that the lesion was without the limb. As the subclavian is one of the valved veins it was thought that the clot was situated in it. No case of thrombosis of the subclavian vein in measles appears to have been previously recorded, but thrombosis of the renal veins and of the cerebral sinuses has been observed.

THE OSTEOLOGY OF THE BUSHMEN.

THERE has been added lately to the Museum of the Royal College of Surgeons of England an extensive collection of skeletons of Bushmen which will prove of great interest to those engaged in the study of the pigmy races of mankind. Along with other specimens added during the last 12 months these skeletons will be on exhibition in the council room of the College on Thursday and Friday, July 6th and 7th, from 10 A.M. to 5 P.M., and on Saturday, the 8th, from 10 A.M. to 1 P.M. This special exhibition is open, as is the Museum itself, to all medical men, and the services of the museum staff are freely at the disposal of visitors. The outstanding feature of the Bushmen, besides their small size and negroid traits, is the juvenile character of the adult skeletons. The Bushmen are in one sense adult boys. One of them shows a remarkable instance of toleration of injury. The upper teeth have ground the food against the alveolar border of the lower jaw until the inferior dental nerve has been freely exposed on the grinding surface. At the annual exhibition numerous additions to the pathological collection, to the series of malformations, to the series of human anatomy, and especially to prehistoric British races, will be on view.

BRACHIAL NEURITIS CAUSED BY PRESSURE OF FIRST RIB.

THE symptoms occasioned by the presence of a supernumerary or cervical rib are now well recognised, and there is excellent reason to believe the condition is more frequent than is commonly supposed. Many patients whose symptoms are diagnosed as acroparæsthesia are found on X-ray examination to be suffering from cervical rib. In any case where the practitioner is consulted because of paræsthesiæ or radiating pains in the arm and hand, particularly if they are referred to certain fingers, where the subjective symptoms are aggravated by muscular effort, such as by the repetition of any occupation movement or movements, and where there may be slight objective impairment of sensibility in the fingers and slight wasting of the thenar eminence or of the radial interossei, he should always have recourse to a radiographic examination, for such symptoms are highly characteristic of cervical rib. A greater rarity, but one, nevertheless, of considerable practical importance, has been described by Mr. Thomas Murphy, surgeon to St. Vincent's Hospital in Melbourne, in the *Australian Medical Journal* for October of last year. His case exemplifies the inadequacy of such a diagnosis as "brachial neuritis" in certain instances and the desirability of radiographic investigation in all. The patient was a young woman aged 28 who complained of numbness, pain, coldness, and tenderness of the left upper extremity, with loss of power in the forearm and hand. The symptoms were always worse after any

exertion involving the use of the arms. They had continued for no less than seven years, varying considerably from time to time. On examination the arm, forearm, and hand were found to be painful on pressure throughout their whole extent. There was no localisation to any particular nerve. The hand and wrist were somewhat swollen and bluish, but no œdema was present. The patient could not close her hand. There was impairment of sensibility in the hand and some wasting of the forearm. On pressure over the brachial plexus just behind the sterno-mastoid there was a point of resistance, with marked tenderness and pain shooting down the arm. The neck was skiagraphed as a cervical rib was suspected, but this apparently was not present. Operation was decided on because of the tenderness and resistance in the neck. When the brachial plexus was exposed it was found that the nerve trunks were stretched over the insertion of the scalenus muscle into the first rib. The scalenus was divided near its insertion, and a considerable portion of the rib resected. Within a few hours of the operation the patient herself remarked that the hand was already normal in colour, instead of being bluish. In a week's time voluntary power had returned in the hand and the pain had entirely disappeared. The cure was perfect and permanent; the patient can now indulge in various forms of muscular exertion, such as typewriting, without any pain whatever. Previously such movements were impossible. A second skiagram showed definitely that it was the first thoracic rib which had been the offending rib. The main symptoms in the case appear to have been due to the effect of the contracting scalenus on the stretched nerve trunks where they passed over the prominence made by the insertion of the muscle into the bone. The circumstances under which an apparently normal first rib can cause severe nerve symptoms are not made quite clear in the case, but the importance of complete investigation of chronic cases of this nature is impressed on us by a perusal of this interesting communication.

ZINC IONISATION IN LUPUS VULGARIS.

As our columns show, ionisation, or the introduction of drugs into the system by electricity, is coming much more into vogue and gives satisfactory results in many conditions. In THE LANCET of April 22nd Dr. J. Curtis Webb reported encouraging results from the treatment of colitis and proctitis by ionisation of a solution of zinc sulphate introduced into the bowel. In a recent number of the *Liverpool Medico-Chirurgical Journal* Dr. G. G. Stopford-Taylor and Dr. R. W. MacKenna have reported good results from the treatment of lupus vulgaris by ionisation of the same salt. Some years ago Dr. Stopford-Taylor ingeniously suggested a plan whereby the electric current might be concentrated on lupus nodules. The horny layer of the epidermis offers considerable resistance to the passage of the current, and if there is any break or abrasion of the epidermis the current tends to concentrate there. Lupus nodules are covered with ill-developed epithelium which is less resistant to the action of liquor potassæ than the surrounding healthy skin. If, therefore, the part to be treated is briskly rubbed over with a pledget of cotton-wool soaked in liquor potassæ the lupus nodules are denuded of their epithelial covering and appear as moist gelatinous masses embedded in the skin. The part is then thoroughly wiped with dry absorbent wool, and two or three layers of lint or a thick pad of cotton-wool, soaked in a 2 per cent. solution of zinc chloride or a 10 per cent. solution of zinc sulphate, are applied. The pad should exactly cover the part. Over this is placed a zinc electrode, which is firmly pressed on and is attached to the positive pole of a battery. The indifferent electrode is a pad soaked in a solution of sodium or ammonium chloride, and is applied to some distant part of the body and connected with the negative pole. The current is obtained from the ordinary galvanic battery of 12 or 24 cells, from accumulators, or from the electric mains through a switch-board. If the current is obtained from an ordinary galvanic battery or accumulator, a rheostat to graduate the intensity of the current, and a milliampèremeter to measure it, are required. The current is switched on gradually, as any sudden alteration in strength is likely to cause painful shock. The intensity to be aimed at is from 2 to 3 milliampères for each square centimetre of surface, which most patients can bear. The duration of the sitting should be from 10 to 20 minutes, but may be less if the patient cannot bear so much. The current should be switched off gradually. On removing the pad every lupus nodule is found converted into a dry glazed whitish plug. Where the skin is not broken there is no evidence of the passage of the current. After removing the electrode a burning sensation is felt, and after an hour or two there are considerable swelling and redness of and around the part treated. From the surface denuded of epithelium serum slowly exudes and dries into a crust, which should not be disturbed. All that is necessary is to apply a calamine or lead lotion. In about a fortnight the crust falls and considerable improvement is seen. Some of the nodules have completely disappeared, others are smaller, and all are more or less superficial. The treatment should be repeated every fortnight until the disease has completely disappeared. The ultimate result is a smooth, pliable, and elastic scar. The curative effect is due to several factors: (1) Zinc ions are powerful germicides; (2) they have strong coagulating drying properties; (3) as a result of the œdema produced by the current, which may last for several days, serum laden with opsonins and phagocytes comes into contact with tubercle bacilli in the nodules. For lupus vulgaris, in which the nodules are discrete, Dr. Stopford-Taylor and Dr. MacKenna have found the treatment superior to any other in speed, efficacy, and scar. They obtained remarkable successes in extensive lupus which had been treated by X rays, Finsen light, or other methods with great improvement, but had persisted in the form of a few scattered nodules. Such nodules may at any time become foci of fresh extension and are best treated by zinc ionisation. The treatment may also be applied with great advantage to lupus of the mucous membrane of the lip or nose.

BRITISH DENTAL ASSOCIATION.

THE annual meeting of this association will be held on August 3rd, 4th, and 5th at the University of London, South Kensington, S.W. The Museum Committee requests for this occasion the loan of specimens illustrating affections (infections and growths) of the periodontal membrane. Specimens, dry or wet, should be accompanied, when possible, by histories, microscopical slides, culture tubes, drawings, photographs, and radiographs, and should bear the name and address of the owner, in which circumstances the committee will hold itself responsible for the care of any specimens lent, and will return the same immediately after the meeting. The following classification will probably be adopted:—

Sites and modes of periodontal infection or growth:—
(1) In membrane itself.
(2) By extension from:—
Gingival margin.
Tooth { Apical region. / Cemental region (trauma).
Bone.
Secondary changes in membrane, gum, tooth, bone, and in more remote parts—e.g., mucous membrane, lymphatic glands, antrum, &c.

Those willing to lend specimens are requested either to communicate with, or forward, not later than July 27th, the specimens

to the honorary secretary of the Museum Committee, Mr. F. Coleman, 129, Harley-street, London, W.

THE election of two members of Council will take place at a meeting of Fellows of the Royal College of Surgeons of England to be held on July 6th. Mr. Dent and Mr. Makins, whose terms of office have expired, will submit themselves for re-election, and a third candidate, Mr. B. G. A. Moynihan of Leeds, is announced.

THE governors and medical staff of Guy's Hospital will hold a garden party at the hospital on Tuesday next, July 4th, at 3 P.M. The medals and prizes will be distributed to the students by the Right Hon. Alfred Lyttelton, K C , M.P. The laboratories, museums, college, the Henriette Raphael Nurses' Home, and wards will be open to inspection from 3 to 5.30 P.M., and music will be provided in the grounds.

RESEARCH DEFENCE SOCIETY.

THE annual general meeting of the Research Defence Society was held on June 19th in the library of the Royal College of Physicians of London.

There were present among others Lord Cromer (in the chair), the Duke of Wellington, Sir Thomas Barlow, Dr. F. W. Sandwith, the Hon. Sydney Holland, Lady Dorothy Nevill, Admiral Fremantle, Sir Charles Cuffe, Sir Hugh Bell, Colonel Gordon, Lord Claud Hamilton, Sir Henry Knollys, the Bishop of Oxford, Professor Leith, Sir Frederick Treves, Sir Frank Lascelles, Sir Frederick Macmillan, Mr. Anthony Hope Hawkins, Sir James Reid, Sir James Dewar, Mrs. Garrett Anderson, the Master of the Temple, and Sir David Ferrier.

Mr. HOLLAND read the report. He then referred to the increase in the numbers of the society and to the work of the past year. He went on to speak of the antivivisection shops lately opened in London, and said that it was shameful that these shops should exhibit stuffed animals, put in position for imaginary experiments, without saying that no operation was permitted on any animal in this country unless the animal was under the influence of an anæsthetic. He pointed out that these shops must have a very demoralising effect on the minds of children. He added that such exhibitions helped the work of the Research Defence Society, for the society took occasion to distribute truthful leaflets and pamphlets outside the shops. Mr. Holland went on to speak of the way in which the society had kept the public informed of the facts of the case. He quoted with special approval a paragraph from Major Marjoribanks's pamphlet, "Friends of Animals," published by the society.

Dr. SANDWITH presented the honorary treasurer's report.

Sir FREDERICK TREVES moved the adoption of the report. He said that the last 25 or 30 years had witnessed an advance which in magnitude and in value of results had never been approached since healing became an art. It had proved a revolution rather than an advance, for such had been the nature of this progress that the very foundations of pathology had been overturned, old faiths had been swept to the winds, the assumed limits of philosophical inquiry had long been passed, while the capabilities of treatment had been so wonderfully expanded as to be worthy of the chambers of health in the New Atlantis. This great advance had led to the saving of innumerable lives, to the relief of unmeasurable pain, and to the providing of a cure for a series of diseases which were but a short while since regarded as beyond hope. This progress had been in the main accomplished by experiments on animals. More than that, without such a method of research the present measure of success could never have been attained. These experiments had not only led to a widely extended knowledge of the general processes of disease, but they had had an immediate, wide, and beneficent effect upon practical medicine. Methods of diagnosis had been rendered simple and exact. Methods of treatment hitherto undreamed of had been made possible, and not only possible, but safe and successful. In the relief of the sick the empiricism of ancient days had been replaced by proved and standardised methods, while the hesitancy and speculation which often attended the employment of new remedies had given way to a confidence based upon precise research. So striking and valuable had been the results of that line of inquiry with which this society was directly concerned that it was unnecessary at the present day to give specific instances to enforce the fact; but it was hard to resist the temptation of referring to the incalculable services which experiments on animals had rendered in the investigation of sleeping sickness. It would be interesting to know what measures the opponents of research would advise if experiments upon animals were to be excluded from an inquiry so urgent and so essential to the saving of human life as this. In view of the sterling and profitable advance which had taken place in all departments of medicine it seemed strange that a society should be needed to defend the methods of research upon which that advance had so conspicuously depended. If there ever was an occasion when it could be claimed that the end had justified the means, it was surely such an occasion as was now under notice. The society had been able to enlighten the public mind on the subject of modern medicine, to make intelligible the difficulties that had been encountered, the elaborate means by which these difficulties had been overcome, and the priceless benefits to humanity which had resulted from the research involved. In conclusion Sir Frederick Treves quoted a parable from Edmund Burke: "Because half-a-dozen grasshoppers under a fern make the field ring with their importunate chink, whilst thousands of great cattle, reposing beneath the shadow of the British Oak, chew the cud and are silent, pray do not imagine that those who make the most noise are the only inhabitants of the field, or that they are other than the loud and troublesome insects of the hour."

Mrs. GARRETT ANDERSON seconded the adoption of the report. She referred to the amount of the society's work, as shown by 150,000 papers distributed during the year, and 90 addresses and lantern lectures given. She said that it was extraordinary that research should need to be defended; but this need was due to "uninstructed conscientiousness," that bane of the world's progress. Evil-disposed people were comparatively few, while the ignorant were the great majority. In this case, more than in most, the ignorant thought they knew. Mrs. Garrett Anderson referred in feeling terms to the death of Sir Rubert Boyce, who had done such great work for the advancement of the University of Liverpool, and for the advancement of the knowledge of tropical diseases.

Lord CROMER then delivered the Presidential address. He said: In considering the position which our society occupies to-day it should, I think, be borne in mind that in the process of what I may call educating the public mind, the scientists, confident in the benevolence of their intentions, and secure in the uprightness of their cause, allowed the antivivisectionists to get a long start of them—an advantage of which, naturally enough, they were not slow to avail themselves. It was only three years ago that we all fully perceived that a humanitarianism, laudable, indeed, in its primary object, but, as we think, misdirected in its methods of action, and ill-informed as regards the true facts of the case, was really threatening the advance of a science which is itself eminently humanitarian in a different, and, I firmly believe, a higher and more rational sense. The reports which we have heard read afford, however, abundant proof that no effort has been spared during the last three years to make up for lost time. The number of our subscribers has been steadily increasing. Progress has, in fact, been satisfactory, a result we owe in a great measure to the untiring perseverance of our indefatigable secretary, Mr. Stephen Paget, to our treasurer, Dr. Sandwith, of whose unselfish labours I cannot speak too highly, and to our able assistant secretary, Miss White. Upon the somewhat numerous occasions when I have publicly pleaded the cause of our society I have heretofore generally dwelt more especially upon the magnificent results which have so far been achieved by the experimental method in the direction of saving the lives and preserving the health both of human beings and of animals. I do not propose to dwell on that branch of the subject now. In this respect our case has, I venture to think, been proved up to the hilt. On the one hand, all this mass of evidence goes to confirm the conclusion which I give on the high authority of Lord Rayleigh, the President of the Royal Society, that "the main cause of the remarkable development of science in modern times has been the adoption of the experimental

method of investigating nature." On the other hand, abundant proof has been adduced, by Dr. Dudley Buxton and other high experts in anæsthesia, to show that the experiments on living animals are generally painless, and are always conducted in this country with a due regard to the paramount necessity of inflicting a minimum amount of suffering. I do not, therefore, propose to say anything more on this branch of the subject. I will, however, ask you to bear in mind that the objects which our society seeks to attain are twofold. We wish not only to point to the results which have been obtained by the experimental method, but also to make known the facts as to experiments on animals in this country, and the regulations under which they are conducted. That I consider a most important object. It is important because we have to recognise that there are a considerable number of distinguished men and women in this country who, it may readily be admitted, are animated by very high moral sentiments, and who, in more or less decisive tones, condemn our proceedings. They represent an aspect of the case which not only demands fair consideration, but which, in so far as the general principle involved is concerned, will, I feel assured, excite the active sympathy of all civilised human beings, whether scientists or those less versed in scientific mysteries. I have said that the general principle advocated by our opponents is of a nature to command our respect and sympathy. I cannot always say as much for the methods which are at times adopted to enforce the validity of that principle. Our opponents may, I think, be divided into several different categories. Let me first deal with that which, as I venture to think, cannot legitimately claim either respect or sympathy. I allude to those who distort facts, and who wilfully calumniate the whole of a noble profession with a view to holding its members up to the unmerited odium of an ill-informed public. What can one say of those who resort to such ignoble methods as these to prove their case? Only this, I think, that it would be beneath the dignity of the profession which they attack to defend itself from such infamous charges, and that the arguments of those who can stoop to the adoption of such methods are wholly undeserving of consideration. Now I pass to another category of opponents, who, although I think they adopt an ethical standard which is both irrational and practically unattainable, are, at the same time, much more deserving of respect than those to whom I have previously alluded. I take as an example of this category the evidence given before the Royal Commission by a very worthy clergyman, the Rev. Lionel Lewis. I say I respect Mr. Lewis because he has the courage of his opinions, and because those opinions are manifestly the outcome of honest and thoroughly sincere conviction. Mr. Lewis was asked the crucial question of whether, supposing a child of his to be suffering from diphtheria, he would allow antitoxin to be used, to which he replied in the negative. "Would you," he was then asked, "let the child die?" to which he replied, "I would." Between those who hold his views and the generality of mankind there is an ethical abyss which it is impossible to bridge over. I fear that little or nothing can be done to influence this category of opinion. And now I come to the third category of critics—for I will not call them opponents—whose views are much more deserving of attention than either of those which I have so far mentioned. I allude to those who admit the necessity of experiments on living animals, but who urge the necessity of obviating by all possible means the infliction of pain. We are happily able to meet these critics on common ground. But, in dealing with this branch of the subject, the question at once arises of the extent to which pain is now inflicted. I do not say it is altogether absent, but I honestly believe it is reduced to a minimum. I quite admit that all reasonable safeguards against even occasional abuses should be instituted; and if the Commissioners, whose report we have for so long been anxiously expecting, can suggest any unobjectionable safeguards in addition to those which already exist, the public may feel assured that the scientific world will give to their proposals fair and even sympathetic consideration. But it is essential—I quote the words of the Royal Society, uttered through the mouth of their spokesman, Lord Rayleigh—that these safeguards "should be so framed as not unnecessarily to interfere with the advancement of knowledge." Unnecessary restrictions would, Lord Rayleigh added, "not only cripple or arrest the growth in this country of an important branch of biological science, but in so doing would reduce the efficiency of both physician and surgeon to mitigate or cure disease." Considering the eminence of the gentlemen who compose the Commission, I cannot doubt that full weight will be given to this essential condition. In any case, our duty as a society is clear. It is to welcome any well-considered and innocuous change in the existing law, but to offer a strenuous opposition to any measures which would retard the advance of knowledge, and which would result in displacing this country from the position it ought to occupy in the van of scientific and beneficent progress.

After delivering his address Lord CROMER put the question to the meeting that the report be adopted, and this was done unanimously by a show of hands.

Sir FRANK LASCELLES proposed a vote of thanks to Lord Cromer for presiding. After alluding to the debt which the society owed to Lord Cromer for all the help and guidance given by him to its affairs, Sir Frank Lascelles went on to speak of the recent meeting of the Royal Society for the Prevention of Cruelty to Animals when a resolution was passed adverse to Lord Cromer's vice-presidency of that society. Sir Frank Lascelles said that he was very glad that Lord Cromer had taken a line directed towards the maintenance of that society's interests, and had upheld the principle that there was no opposition between the objects of the Research Defence Society and the objects of the Society for the Prevention of Cruelty to Animals.

The vote of thanks was seconded by Dr. SANDWITH, who referred to his personal knowledge of Lord Cromer's administration in Egypt.

The vote of thanks was carried by acclamation.

Lord CROMER, acknowledging the vote of thanks, referred to some of the early experiences of the Egyptian Society for the Prevention of Cruelty to Animals. With regard to the recent action at the meeting of the Royal Society for the Prevention of Cruelty to Animals, Lord Cromer said that he thought it would be a mistake to attach much importance to the "little skirmish" between himself and Mr. Coleridge. It was what his friend sitting near him, Sir Reginald Talbot, would describe as an affair of outposts. His only wish had been to save that society from the clutches of its more extreme supporters, and he hoped that his action had produced that effect. Lord Cromer went on to speak of the proposal that there should be more inspection under the Act. He said that the Research Defence Society would give thorough and careful consideration to such a proposal; but it was necessary to ask, What kind of inspection? The society could not support any proposal for any such inspection as might hinder or harass our men of science in their work. He went on to speak of the proposal that dogs should be exempted from experiments altogether. We are all of us, he said, fond of dogs. At the same time he believed that this proposal was founded on sentiment, not on reason. He did not see that it was in any way worse for a dog to die under an anæsthetic in a physiological laboratory than to die in the lethal chamber at Battersea. He hated cruelty in any shape or form; but he held that cruelty to a fox, or a cock pheasant, or a partridge, or a hare, was just as objectionable as cruelty to a dog. There were certain experiments, very limited in number, for which it was necessary that a dog should be used; and these experiments were of very great value to mankind.

The meeting then terminated.

THE CORONATION MEDICAL HONOURS.

WE printed last week the names of those members of the medical profession who were announced at the moment of our going to press as the recipients of titular distinction among the Coronation honours. The medical profession has received adequate treatment, and we feel certain that the list of medical honours meets with the warm approval of our readers. We now publish the complete list. Many of those who are thus honoured are so distinguished, and their claims to recognition in this way are so obvious, that it is scarcely necessary to mention their achievements or to detail the prominent positions which they hold and have held. Five baronetcies are conferred upon members of our profession.

Mr. Henry T. Butlin, the distinguished President of the Royal College of Surgeons of England, is also President of

the British Medical Association and consulting surgeon to St. Bartholomew's Hospital. His public services to medicine have been great and varied. He has been dean of the Faculty of Medicine in the University of London and President of the Pathological and Laryngological Societies, while he has held many other offices in the Royal College of Surgeons and at his old hospital.

Dr. William Osler, Regius professor of medicine in the University of Oxford, is famous throughout two continents. He has been professor of medicine at the Johns Hopkins University, and at McGill University, Montreal, and he has enriched the literature of medicine with many works of high scientific and literary value.

Dr. J. F. Goodhart, consulting physician to Guy's Hospital and the Evelina Hospital for Children, is an eminent clinician whose name is a household word in general medicine as well as pædiatrics.

Sir Charles B. Ball, the President of the Royal Academy of Medicine in Ireland, is a distinguished member of a distinguished family. He is the representative on the General Medical Council of the University of Dublin, in which body he is Regius professor of surgery. He is surgeon to Sir Patrick Dun's Hospital and honorary surgeon to the King in Ireland.

Sir W. Thornley Stoker, consulting surgeon to the Richmond, Whitworth, and Hardwicke Hospitals, Dublin, is another eminent member of the Irish medical profession. He is a past-President of the Royal College of Surgeons and of the Royal Academy of Medicine in Ireland, and he is His Majesty's Inspector of Anatomy and Government Inspector under the Vivisection Act in that country.

Knighthoods have been bestowed upon Mr. A. A. Bowlby, C.M G , surgeon to St. Bartholomew's Hospital and surgeon-in-ordinary to the King, who is a member of the Council of the Royal College of Surgeons of England, and served as senior surgeon in charge of the "Portland Hospital" in the South African war; upon Mr. R. Brayn, Home Office adviser in lunacy and late medical superintendent of Broadmoor Asylum; upon Dr. Alexander Dempsey, a well-known Belfast obstetric physician, who is physician and gynæcologist to the Mater Infirmorum Hospital; upon Dr. F. W. Hewitt, anæsthetist to the King and physician-anæsthetist to St. George's Hospital; upon the Hon. John McCall, Agent-General for Tasmania in London, and Member of the House of Assembly and of the Executive Council, who has done much useful public work and was President of the Central Board of Health; and upon Mr. F. C. Wallis, surgeon to Charing Cross Hospital.

The honour of K.C.B. has been conferred upon Inspector-General D. M. Shaw, who saw active service during the Crimea and the bombardment of Alexandria, and was in charge of several naval hospitals before his retirement; upon Inspector-General T. D. Gimlette, the head of the Royal Naval Hospital, Haslar; upon Surgeon-General W. L. Gubbins, C.B., Director-General of the Army Medical Service; upon Surgeon-General A. S. Reid, C.B., of the Indian Medical Service, lately principal medical officer of the Punjab Command; upon Major Ronald Ross, professor of tropical medicine in the University of Liverpool and the Liverpool School of Tropical Medicine, who was awarded the Nobel Prize for Medicine in 1902, and whose services in the campaign against malaria are world-famous; and upon Dr. B. A. Whitelegge, C.B., H.M. Chief Inspector of Factories and Workshops.

The distinction of K.C.M.G. has been conferred upon Dr. J. Rose Bradford, one of the two secretaries to the Royal Society, physician to University College Hospital, and among our foremost scientific physicians; and upon Dr. John Pringle, C.M.G., member of the Privy and Legislative Councils of Jamaica.

Dr. Bertrand Dawson, physician-extraordinary to the King and physician to the London Hospital, is appointed K.C.V.O.

The C.M G. is conferred upon Dr. James W. Barrett, member of the council and lecturer of the University of Melbourne; Mr. Dugald Christie, head of the Mukden Medical Mission; and Dr. T. Zammit, Government Analyst, Malta. The following are appointed C.B.'s.: Inspector-General C. C. Godding, Inspector-General A. W. May, Inspector-General H. J. McC. Todd, and Fleet-Surgeon P. W. Bassett-Smith of the Royal Navy; Surgeon-General G. W. Robinson, principal medical officer of the Aldershot Command; Surgeon-General James G. MacNeece; Colonel C. F. Willis and Colonel T. Grainger, of the Indian Medical Service; Lieutenant-Colonel H. E. R. James, R.A.M.C. (retired), attached to the general staff at the War Office; Colonel G. S. Elliston, Administrative Medical Officer of the East Anglian Division; and Colonel P. B. Giles. Colonel J. R. Thomas, M.D., is appointed Honorary Physician, and Colonel Damer Harrisson, F.R.C.S. Edin., is appointed Honorary Surgeon to His Majesty for His Majesty's Territorial Force.

The C.V.O. has been conferred upon Fleet-Surgeon A. R. Bankart, Mr. Milsom Rees, and Mr. Mayo Robson, and the M.V.O. upon Mr. William Fairbank.

Dr. Michael Cox has been made an Irish Privy Councillor. The Hon. Sir Frederick Borden, Canadian Minister for Militia and Defence, has been made an Honorary Surgeon-General; and Sir James Reid, Bart., G.C.V.O., K.C.B., has been granted by His Majesty an augmentation of arms in consideration of services rendered to His late Majesty King Edward.

RECENT DEVELOPMENTS AT STRATHPEFFER SPA.

THERE are signs of a growing recognition that this country possesses health resorts offering natural facilities for the relief of disease which rival those presented at the well-known watering places abroad. A glance through our own columns for the past few years will disclose more than one example of a determined effort to make our home health resorts and their advantages better known to the public, and to bring them to a high level, not only in regard to treatment, but also to social attractions and domestic comforts. This is as it should be, and we are glad to recognise that the feeling is spreading that there is no reason why this country should be outstripped in this matter by foreign countries.

The British Isles possess every kind of natural mineral water which can be found elsewhere in the world. There are thermal waters, carbonated alkaline waters, saline purgative waters, brine baths, sulphur waters, iodo-waters, chalybeate waters, and so forth, the medicinal value of all of which in various ailments has been demonstrated in practice. The materials are plainly here, and if only a system of régime in regard to their medical application were adopted with the rigour and discipline commonly practised at continental health resorts a great stimulus would be given to the development of our home spas. It is a good omen that our railway authorities are beginning to see that the health resorts and spas upon the various lines can be made a source of revenue to their systems, and there is hope for the future of home balneological practice when our great railway organisations turn their attention seriously to the development of health stations along their routes. Fortunately, many of our lines bring within reach spots which are beautiful besides health-giving.

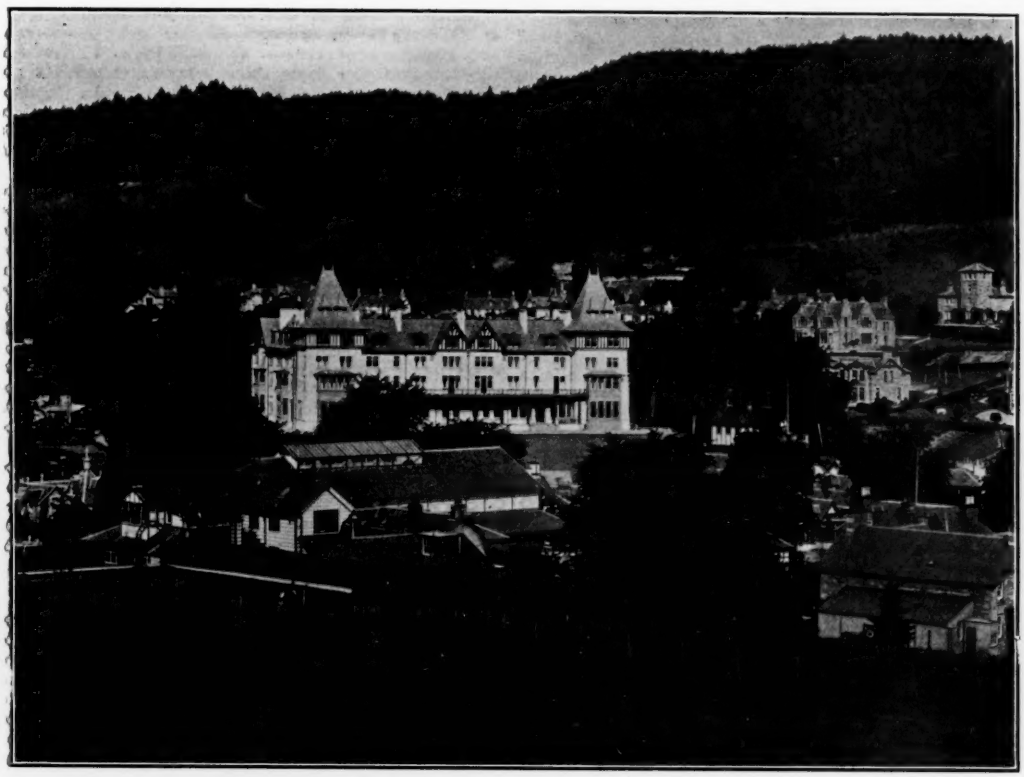
Nothing can exceed the beauty, for example, of the Highlands of Scotland, and these have long boasted a "spa" at Strathpeffer, which is situated in the very midst of some of the most romantic and picturesque scenery in North Britain. To the south-east approached from Perth is Aviemore, close by the Cairn Gorm mountains, then the gorgeous Killiecrankie pass, Kingussie, the heights of Dalwhinnie and Dalnaspidal. Mountain streams, lochs and glens form a continual panorama of great interest and beauty. To the west the Highland railway takes the traveller from Strathpeffer through country unsurpassed for the romance and magnificence of its scenery, until at length the sea is reached at the Kyle of Lochalsh, where the mountains of Skye and the islands of the Hebrides come in view to charm the eye and to impress the imagination with their wild grandeur. The enterprise of the railway in this part of the country has recently been manifested in its determination to provide Strathpeffer with a splendidly appointed hotel, a view of which is given in the accompanying illustration. The hotel is majestic in its proportions, and recalls the "hofs" of German health resorts. The justification for its existence is a sulphur spring, a health-giving environment, and a site endowed with great natural beauties.

The most important water at Strathpeffer is that drawn from the sulphur wells, of which there are three, but there

is also a chalybeate water of the type of the "Stahlbrunnen" on the continent. The strong sulphur water is quite redolent of sulphuretted hydrogen and contains in addition alkaline sulphides. Although strongly sulphuretted the water has a curiously cleansing effect upon the mouth owing to its antacid constituents. The reputation of Strathpeffer rests mainly upon successful results achieved in the treatment of chronic and subacute gout and rheumatism—especially the articular type—rheumatoid arthritis (in certain stages), and chronic rheumatism of muscles and nerves, such as lumbago and sciatica, but the waters have been used with benefit also in chronic skin diseases, disorders of digestion, urinary disorders, uterine troubles, and in functional nervous disorders.

The drinking of the waters, however, is only one form of administration; there is an admirable series of immersion baths, and peat baths and douche baths form a feature of the installation. Provision is made also for treatment by electric methods, by spray inhalations, and as auxiliaries may be mentioned the Nauheim bath and the Russian bath.

Apart from the abundant enjoyment afforded by the ever-varying landscape round Strathpeffer, the authorities at the spa have not been unmindful of the importance of providing recreation in other directions. There is an attractive golf course of 18 holes, situated at a level of 200 feet above the pump-room, which commands some delightful views of the valleys and hills of the surrounding country. Then there are bowling-greens, croquet-lawns, and a cricket-field, and a concert-hall in which during the season the orchestra discourses good music, while adjoining the hall are rooms for billiards, bagatelle, or card-playing, and a restaurant. The gardens are picturesquely laid out and well-stocked with flowers. There is a restful, peaceful air about the place which appeals especially to those who seek recuperation, and a respite from the wearing influences of worry and hustle.



Strathpeffer Spa, showing the new Highland Railway Hotel, Concert Room and Pump House.

The new hotel was opened on Tuesday, June 13th, a date which marks the opening of the Scottish Highlands season, and there were present at the joint invitation of the London and Northern-Western Railway Company, the Highland Railway Company, the North British Railway Company, and the Caledonian Railway Company, a large concourse of guests, including several medical men and representatives of the Scottish, provincial, and London press. The railway companies further extended a courteous invitation to a number of the latter gentlemen to a journey through the Western Highlands. The weather was ideal, and the trip through the magnificent scenery of mountain and loch was a source of veritable delight to all.

ASSOCIATION OF SCHOOL MEDICAL OFFICERS FOR SCOTLAND.—A general meeting of this association was held in Dunfermline on June 17th. At a business meeting Dr. Ernest T. Roberts, the President, was in the chair, 34 members were present, and 25 ladies and gentlemen were duly elected members of the association. A demonstration by students of the Physical Training College was given in the gymnasium. In the afternoon, through the courtesy of Dr. L. Cruikshank, chief medical officer Carnegie Dunfermline Trust, the members were enabled to visit the schcol clinic, the dental clinic, the baths, and the gymnasium, the various items of interest in these institutions being exhibited, and explained by the members of the staff. Dr. Cruikshank read a valuable paper on the Function and Management of the School Clinic. After discussion on the paper Dr. Roberts proposed a vote of thanks to Dr. Cruikshank for his paper and the trouble he had taken in arranging such an interesting and instructive programme, also thanking Dr. Ross, the chairman of the Carnegie Dunfermline Trust, for the hospitality extended to the members of the association. By the kindness of the Carnegie Dunfermline Trust the members of the association were entertained to lunch, and later to tea in the Pittencrieff Park.

MEDICINE IN SCANDINAVIA.

No. I.—NORWAY.

HUNDREDS of English medical men are acquainted with Norway as a land of holiday making, fishing, and shooting; but few have the time or opportunity to study the conditions under which their fellow practitioners in Norway live, and a short sketch of these conditions by one who has lived for many years in the country may not be without interest.

Medical Education in Norway.

The University of Christiania is the only educational centre which gives a medical training and degree. Here the would-be medical student must first pass the examination "Artium" before he can be registered as a student. This examination, which includes such general subjects as languages and mathematics, is usually taken at the age of 18 or 19. Having satisfied the examiners, the student commences the study of medicine, the average time taken to qualify being seven years. Three examinations are held. The first, which is commonly taken after three years' study, includes human anatomy and physiology, chemistry, botany, and zoology. This examination passed, the student begins hospital practice, and subsequently enters for the second examination, which includes pharmacology and toxicology, pathology and therapeutics, surgery, and the special diseases of the eye and the skin. The third examination, which is usually taken six months or a year later, includes clinical pathology and therapeutics, as well as surgical anatomy, gynæcology, obstetrics, hygiene, and medical jurisprudence. A curious regulation condemns the candidate who fails in the second part to enter for the first part *de novo*. Still worse is the fate of the unsuccessful candidate for the third part, who must take both the previous parts again. In practice, however, the unfit are weeded out by the first part, while less than 1 per cent. of the candidates for the other two parts fail. A powerful check is further put on the candidate entering for his final examinations too early by the division of the successful candidates into two classes. The occupants of Class I. form about one-half of the successful candidates. The general public seldom knows to which of the above classes any medical man belongs, but this division affects the seniority of a candidate for Government and other appointments.

Most of the text-books used are German or Scandinavian, but Cushny's "Pharmacology" and Withington's "History of Medicine" are recommended to the student by the Board of Medical Study, and several other English works are well known in Norway. As all, or nearly all, Norwegian medical men read German fluently, and most read either English or French, the demand for Norwegian text-books is strictly limited. There are three excellent medical periodicals, of which the monthly journal, *Norsk Magazin for Laegevidenskaben*, under the able editorship of Dr. E. Wang and his predecessors, has undoubtedly become the most interesting of all the Scandinavian medical journals.

Cost of Medical Training.—Number of Medical Men.

The cost of medical training, as of other forms of education, falls rather on the tax- and rate-payer than on the student, who, if his home is in Christiania, has little to provide beyond books and instruments. The low cost of education has naturally increased competition, and many of the most successful medical men are the sons of peasants. In the "eighties" the number of medical students was out of all proportion to the demand, the limitation of which has much reduced the supply of late years. To Norwegians who cannot find elbow-room at home there are, fortunately, excellent opportunities in the United States, where their fellow countrymen are numerous and prosperous, and where their reputation for professional skill is deservedly high. The number of Norwegians practising in the United States is now 64. At home there are 1161 medical men, whose ratio to the general population is as 1 to 2007. Of these, 437 are settled in the seven chief towns. There are 38 ladies practising, who form 3 per cent. of the total number of medical practitioners. Few of these have risen to any great distinction in the profession.

Organisation of the Medical Profession.

The Norwegian Medical Association (Den Norske Laegeforening) was founded in 1886, when the need for organisation had become urgent owing to overcrowding in the profession and the subsequent tendency on the part of the public to cut down prices. To-day the membership has risen to 1076. The discipline exercised by the executive is autocratic, but just, and largely owing to the vigorous personality of its secretary, Dr. Hansson, the association has become a most powerful organisation.

The Association has a wide and varied range of activity. In the capacity of a medical agency it is a reliable medium for the transfer of practices and the provision of assistants. It has long been an efficient check on quackery and the sale of secret remedies, the laws directed against which are most stringent. Thus an unqualified practitioner who ventures to treat tuberculosis or other infectious diseases is liable to a fine or imprisonment; and the importation and sale of secret remedies are prohibited. Unfortunately, the law still has flaws through which the adroit quack may successfully drive a coach and four. An instance of this occurred recently, when the vendor of an electric belt was tried for infringing the above laws. His acquittal (on a technical point of law) has been boldly exploited in subsequent advertisements.

A minor revolution has lately occurred in the South of Norway, where a district council decided to appoint two medical officers, whose services (with certain reservations) were to be at the disposal of every ratepayer free of charge. The question was thoroughly discussed by the Association at its general meeting in 1909, and the principle involved was provisionally accepted, though the terms demanded by the Association were far more advantageous to its members than those offered by the district council. However, the Association's terms were ultimately accepted, and the two medical men already practising in the district were appointed as its communal medical officers. The system has hitherto worked satisfactorily, but it is doubtful whether the ratepayers will countenance this expensive change in the long run.

Insurance against sickness and accidents is already compulsory upon certain classes, and the Government proposes to introduce a general scheme of compulsory insurance for all the poorer classes. The medical profession is, therefore, confronted with numerous problems, the solution of which is anxiously awaited by all concerned.

Government Appointments.

At present the majority of Government appointments consist of "distriktslaege embeder," corresponding to a certain degree to the appointments of the medical officers of health in England. These, of which there are 155, are much sought after, as the salary ranges, according to the district and the age of the officer, from £83 to £161. Private practice is permitted and a pension of about £111 awaits, as a rule, the medical officer, whose widow also, under certain conditions, receives a small allowance. The principal duties of these medical officers are the treatment and notification of infectious diseases, public vaccination, the treatment of paupers, and the supervision of the insane.

Post-graduate Study.—Scientific Contributions.

Post-graduate study is encouraged by the Government, which provides instruction and facilities for country practitioners to attend special classes in the larger centres. The desire to keep abreast of the times in medical knowledge is most noticeable, even in the older generation of practitioners, and I have witnessed an operation for appendicitis successfully performed, and the appendix removed, by a medical man whose knowledge of operative abdominal surgery was acquired after the age of 60!

Norwegian contributions to the science of medicine include Armaur Hansen's discovery of the bacillus lepræ. His brother, Claus Hansen, has distinguished himself by his work on tuberculosis, and the rapid fall in the tuberculosis death-rate is largely due to the present tuberculosis laws, for which he is mainly responsible. Axel Holst's work on scurvy and beri-beri and Haaland's work on cancer are already well known in this country.

GOLF: BRISTOL MEDICALS *v.* BATH MEDICALS.—A match between the Bristol Medical Golfing Society and the Bath medicals was played at Failand, Bristol, on June 14th, and an enjoyable contest ended in favour of the home team by 5½ points to 3½.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 9159 births and 3781 deaths were registered during the week ending June 17th. Based on the results of the recent Census, the estimated population of these 77 towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this estimate, which had declined in the nine preceding weeks from 15·9 to 12·2 per 1000, was again equal to 12·2 in the week under notice. During the first 11 weeks of the current quarter the annual rate in these towns averaged 14·3 per 1000; in London during the same period the mean annual death-rate did not exceed 13·6 per 1000. The annual recorded death-rates during the week in the 77 towns ranged from 3·0 in Handsworth, 4·3 in Hornsey, 5·4 in Burton-on-Trent, and 5·7 in Barrow-in-Furness, to 17·2 in Sunderland, 18·0 in Stoke-on-Trent, 19·0 in Stockton-on-Tees, and 19·1 in West Bromwich. The 3781 deaths from all causes in the 77 towns during the week only exceeded by 7 the low number returned in the previous week, and included 364 which were referred to the principal epidemic diseases, showing a further slight increase upon the numbers in the two preceding weeks. Of these 364 deaths, 124 resulted from measles, 88 from infantile diarrhœa, 69 from whooping-cough, 47 from diphtheria, 28 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual rate from these epidemic diseases in the 77 towns, which had been equal to 1·0 and 1·1 per 1000 in the two previous weeks, further rose to 1·2. The fatal cases of measles in the 77 towns, which had been 153, 119, and 125 in the three preceding weeks, were 124 in the week under notice; the highest annual death-rates from this disease recorded during the week in these towns were 1·9 per 1000 in Stockport, South Shields, and Newport (Mon.), and 2·2 in Smethwick. The deaths of infants under two years of age attributed to diarrhœa in these towns further rose to 88. The fatal cases of whooping-cough, which had been 76 and 81 in the two previous weeks, declined to 69, and were fewer than in any week since January last; they were proportionally most numerous in Newcastle-on-Tyne and Warrington. The deaths referred to diphtheria, which had been 26 and 37 in the two preceding weeks, further rose to 47; they included 17 in London and its suburban districts, 6 in Stoke-on-Trent, and 3 in Cardiff. The 28 fatal cases of scarlet fever also showed a considerable increase upon recent weekly numbers; 4 were recorded in Stoke-on-Trent, 3 each in London and Manchester, and 2 each in Liverpool, Southampton, and Hull. Of the 8 deaths referred to enteric fever, 2 occurred in Portsmouth and 2 in Devonport. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the nine preceding weeks from 982 to 1141, had further risen to 1207 at the end of the week under notice; 190 new cases of this disease were admitted to these hospitals during this week, against 185 and 152 in the two previous weeks. These hospitals also contained 825 cases of diphtheria, 480 of measles, 273 of whooping-cough, 30 of enteric fever, and 4 of small-pox on June 17th. The 975 deaths from all causes in London showed a further decline from the low numbers in recent weeks, and included 139 which were referred to diseases of the respiratory system, against 134 and 141 in the two preceding weeks; only 3 deaths were directly referred to influenza. The deaths attributed to different forms of violence in the 77 towns, which had been 177, 175, and 172 in the three preceding weeks, further declined to 162 in the week under notice, and 346 inquest cases were registered. The causes of 37, or 1·0 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death recorded during the week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 51 other smaller towns; the 37 uncertified causes of death in the 77 towns during the week included 6 in Liverpool, 5 in Birmingham, and 4 both in Sunderland and in Gateshead.

In the 77 largest English towns 6830 births and 3487 deaths were registered during the week ending June 24th. The revised estimate of the population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had declined in the ten preceding weeks from 16·8 to 12·2 per 1000, further fell to 11·3 in the week under notice. During the first 12 weeks of the second quarter of this year the annual death-rate in these towns averaged 14·0 per 1000; in London during the same period the mean annual death-rate did not exceed 13·4 per 1000. The recorded annual death-rates during last week in the 77 towns ranged from 5·1 in King's Norton, 5·5 in Hornsey, 5·7 in Tottenham, and 6·8 in Walsall; to 15·7 in Liverpool, 15·8 in Wigan, and 17·0 in Stockton-on-Tees. The 3487 deaths from all causes in the 77 towns last week showed a decline of 293 from the number in the previous week, probably caused in some measure to delay in registration owing to the Coronation celebration, and included 273 which were referred to the principal epidemic diseases, against 341 and 364 in the two preceding weeks. Of these 273 deaths, 86 resulted from infantile diarrhœa, 81 from measles, 63 from whooping-cough, 21 from diphtheria, 14 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases, which had been equal to 1·1 and 1·2 per 1000 in the two previous weeks, declined last week to 0·9. The fatal cases of measles in the 77 towns, which had been 119, 125, and 124 in the three preceding weeks, fell to 81 last week, and were fewer than in any previous week of this year; the highest annual death-rates from this disease recorded in these towns last week were 1·4 in South Shields and 1·9 in Great Yarmouth. The 86 deaths attributed to infantile diarrhœa, which had increased in the five preceding weeks from 52 to 88, were 86 last week, including 21 in London and its suburban districts, 12 in Liverpool, and 6 both in Manchester and in Birmingham. The fatal cases of whooping-cough, which had been 81 and 69 in the two previous weeks, were 63 last week, including 15 in London and its suburban districts, and 5 both in Liverpool and in Leeds. The 21 deaths referred to diphtheria were fewer by 26 than the number in the previous week; 7 occurred in London and its suburban districts, and 2 each in Liverpool and in Bradford. Six of the 14 fatal cases of scarlet fever (against 28 in the previous week) were of London residents. The 8 deaths referred to enteric fever corresponded with the number in the previous week, and included 3 in London and 2 in Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the ten preceding weeks from 982 to 1207, had further risen to 1223 at the end of last week; 159 new cases of this disease were admitted to these hospitals during the week under notice, against 152 and 190 in the two previous weeks. These hospitals also contained 808 cases of diphtheria, 467 of measles, 284 of whooping-cough, 32 of enteric fever, and 4 of small-pox. The 921 deaths from all causes in London showed a further decline from the low numbers in recent weeks, and included 111 which were referred to diseases of the respiratory system, against 141 and 139 in the two preceding weeks. The deaths attributed to different forms of violence in the 77 towns, which had declined from 177 to 162 in the four preceding weeks, further fell to 136 last week; 279 inquest cases were registered. The causes of 27, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in London and its suburban districts, in Sheffield, Leeds, Bristol, Bradford, Nottingham, Stoke-on-Trent, and in 45 other smaller towns; the 27 uncertified causes of death in the 77 towns last week included 6 in Liverpool, 3 in Birmingham, and 2 each in Bootle, Rochdale, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons (based on the recent Census enumeration), 908 births and 466 deaths were registered during the week ending June 17th. The annual rate of mortality in these towns, which had been equal to 17·7, 16·9, and 14·9 per 1000 in the three preceding weeks, further declined to 14·2 in the week under notice. During the first 11 weeks of the current quarter the annual rate in these towns averaged 17·3 per 1000

of the revised estimate of their population, and exceeded by 3·0 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 11·5 and 13·5 in Aberdeen and Edinburgh, to 15·2 in Greenock, and 17·9 in Paisley. The 466 deaths during the week from all causes in the eight towns showed a further decrease of 23 from the numbers in recent weeks, and included 64 which were referred to the principal epidemic diseases, against 67 and 56 in the two previous weeks; of these 64 deaths, 27 resulted from whooping-cough, 15 from diarrhœa, 14 from measles, 5 from diphtheria, and 3 from scarlet fever, but not one either from small-pox or enteric fever. The mean annual death-rate from these epidemic diseases in the eight towns during the week was equal to 2·0 per 1000, exceeding by 0·8 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had been 43 and 32 in the two previous weeks, further declined to 27, of which 12 occurred in Glasgow, 5 in Edinburgh, 3 in Greenock, and 2 each in Dundee, Paisley, and Perth. The 15 deaths attributed to diarrhœa showed a marked increase upon recent weekly numbers, 12 being of infants under two years of age; they included 8 in Glasgow and 5 in Edinburgh. The 14 fatal cases of measles also exceeded the numbers in recent weeks; 10 occurred in Glasgow and 2 both in Edinburgh and in Leith. The 5 deaths from diphtheria included 2 in Glasgow and 2 in Perth; and a fatal case of scarlet fever was recorded in Glasgow, in Edinburgh, and in Paisley. The deaths referred to diseases of the respiratory system in the eight towns, which had been 78, 76, and 52 in the three preceding weeks, further declined to 49 in the week under notice, and were 7 below the number in the corresponding week of last year. Of the 466 deaths from all causes in the eight towns 161, or 35 per cent., were recorded in public institutions, and 13 were attributed to different forms of violence. The causes of 10, or 2·1 per cent., of the deaths in the eight towns during the week were not certified or not stated; in the 77 English towns during the week the proportion of uncertified causes of death did not exceed 1·0 per cent.

In the eight principal Scotch towns, with an estimated population of 1,710,291 persons, 825 births and 435 deaths were registered during the week ending June 24th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 17·7 to 14·2 per 1000, further fell to 13·3 in the week under notice. During the first 12 weeks of the past quarter the annual death-rate in these towns averaged 17·0 per 1000 of the revised estimate of their population, and exceeded by 3·0 the revised mean rate during the same period in the 77 large English towns. The annual death-rate during the week under notice in the eight Scotch towns ranged from 8·3 and 11·5 in Aberdeen and Edinburgh to 15·5 in Dundee and 22·2 in Greenock. The 435 deaths from all causes in the eight towns last week showed a further decrease of 31 from the decreasing numbers in recent weeks, and included 58 which were referred to the principal epidemic diseases, against 56 and 64 in the two previous weeks; of these 58 deaths, 25 resulted from whooping-cough, 16 from measles, 13 from infantile diarrhœa, 2 from scarlet fever, and 1 each from diphtheria and enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 1·8 per 1000, and exceeded by 0·9 the mean rate from the same diseases in the 77 English towns. The fatal cases of whooping-cough in the eight towns, which had been 43, 32, and 27 in the three preceding weeks, further declined to 25 last week, of which 14 occurred in Glasgow, 3 in Edinburgh, 3 in Paisley, and 2 in Greenock. The 16 deaths from measles showed a further increase upon recent weekly numbers, and included 12 in Glasgow and 3 in Edinburgh. The 13 deaths of infants under two years of age attributed to diarrhœa were fewer by 2 than the number in the previous week; 5 occurred in Glasgow, 3 in Dundee, and 2 both in Edinburgh and Paisley. One of the 2 fatal cases of scarlet fever and the death referred to enteric fever were recorded in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had declined in the four preceding weeks from 78 to 49, were 51 last week, and were 10 below the number in the corresponding week of last year. Of the 435 deaths from all causes in the eight towns, 137, or 31 per cent., were recorded in public institutions, and 18 were attributed to different forms of violence. The causes of 14, or 3·2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns during the week the proportion of uncertified causes of death did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the numbers enumerated at the recent Census), 692 births and 350 deaths were registered during the week ending June 17th. The annual rate of mortality in these towns, which had been equal to 17·1 and 16·1 per 1000 in the two preceding weeks, further declined to 15·9 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these towns averaged 18·5 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·3, and in the eight principal Scotch towns 17·3 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 19·2 in Dublin (against 11·2 in London), 14·4 in Belfast, 15·0 in Cork, 10·2 in Londonderry, 12·2 in Limerick, and 17·1 in Waterford; and in the 16 smallest of these Irish towns the mean annual death-rate during the week did not exceed 13·6 per 1000. The 350 deaths from all causes in the 22 towns during the week showed a further decline of 4 from the numbers in recent weeks, and included 23 which were referred to the principal epidemic diseases, against 29 and 21 in the two previous weeks; these 23 deaths were equal to an annual rate of 1·0 per 1000, which was slightly lower than the mean rate from the same diseases in the 77 English towns. These 23 deaths from the principal epidemic diseases in the Irish towns during the week included 9 from diarrhœa, 8 from whooping-cough, 3 from diphtheria, 2 from measles, and 1 from scarlet fever, but not one from enteric fever or small-pox. The 9 deaths attributed to diarrhœa showed an increase of 2 upon the number in the previous week, all being of infants under two years of age; 4 were recorded in Dublin. The 8 fatal cases of whooping-cough showed an increase of 7 on the number in the previous week, and included 4 in Belfast and 3 in Dublin. A death from diphtheria was recorded in Dublin, in Dundalk, and in Ballymena. Both the fatal cases of measles occurred in Dublin, and that of scarlet fever in Belfast. The 64 deaths referred to diseases of the respiratory system in the 22 towns corresponded with the number in the previous week. Of the 350 deaths from all causes during the week, 114, or 33 per cent., were recorded in public institutions, and 11 were referred to different forms of violence. The causes of 12, or 3·4 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 1·0 per cent. in the 77 largest English towns, and was equal to 2·1 per cent. in the eight principal Scotch towns.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons (based on the recent Census numbers) 577 births and 297 deaths were registered during the week ending June 24th. The annual rate of mortality in these towns, which had been equal to 17·1, 16·1, and 15·9 per 1000 in the three preceding weeks, further declined to 13·5 in the week under notice. During the first 12 weeks of the past quarter the annual death-rate in these towns averaged 18·1 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·0 per per 1000, and in the eight principal Scotch towns 17·0 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 15·1 in Dublin (against 10·6 in London), 11·1 in Belfast, 19·7 in Cork, 8·9 in Londonderry, 6·8 in Limerick, and 7·6 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate last week was equal to 15·7 per 1000. The 297 deaths from all causes in the 22 towns last week showed a further decline of 53 from the numbers in recent weeks, and included 27 which were referred to the principal epidemic diseases, against 21 and 23 in the two previous weeks; these 27 deaths were equal to an annual rate of 1·2 per 1000, which exceeded by 0·3 the mean rate from the same diseases

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,522,628	2	818	572	—	43	—	29	387	8	1859	4·3	—	206	18	42	136	6	78	486	1·1	5483	13·2
West Districts.																							
Paddington	142,541	—	23	17	—	—	—	—	6	—	46	3·4	—	1	—	—	9	—	2	12	0·9	148	11·5
Kensington	172 296	—	20	15	—	3	—	—	13	—	51	3·1	—	3	—	1	13	—	4	21	1·3	198	12·9
Hammersmith	121,837	—	22	26	—	1	—	—	9	—	58	5·0	—	7	1	3	8	—	3	22	1·9	175	15·6
Fulham	153,726	—	38	24	—	1	—	1	9	—	73	5·0	—	3	1	2	4	—	3	13	0·9	174	12·3
Chelsea	66,218	—	15	7	—	1	—	—	5	—	28	4·4	—	3	—	—	2	—	1	6	0·9	88	14·4
City of Westminster	159 709	—	11	5	—	1	—	—	7	—	24	1·6	—	2	—	1	9	—	1	13	0·8	182	13·3
North Districts.																							
St. Marylebone	117,844	—	7	13	—	—	—	—	7	—	27	2·4	—	4	—	2	4	—	2	12	1·1	156	14·7
Hampstead	85,599	—	8	5	—	—	—	—	5	—	18	2·2	—	3	—	1	—	—	1	5	0·6	84	11·5
St. Pancras	218,031	—	43	15	—	4	—	4	14	1	81	3·9	—	5	2	3	3	—	3	16	0·7	262	13·1
Islington	327,234	—	59	44	—	2	—	1	21	—	127	4·0	—	8	3	3	7	—	6	27	0·9	365	12·1
Stoke Newington	50,669	—	4	9	—	—	—	—	6	—	19	3·9	—	1	—	1	1	—	1	4	0·8	49	10·5
Hackney	222,674	—	38	24	—	8	—	—	26	1	97	4·5	—	19	—	1	9	1	2	32	1·5	282	13·8
Central Districts.																							
Holborn	49,084	—	9	11	—	4	—	1	3	—	28	5·9	—	—	1	—	1	—	—	2	0·4	67	15·3
Finsbury	87,639	—	16	20	—	1	—	—	27	—	64	7·6	—	4	—	1	4	—	2	11	1·3	122	15·0
City of London	19,475	—	3	—	—	—	—	—	—	—	3	1·6	—	—	—	—	—	—	—	—	—	32	18·8
East Districts.																							
Shoreditch	111,284	—	16	12	—	—	—	1	8	—	37	3·5	—	8	—	1	6	—	7	22	2·1	187	18·4
Bethnal Green	128,247	—	17	9	—	—	—	4	16	—	46	3·7	—	14	—	2	2	—	3	21	1·7	185	15·2
Stepney	279,560	—	23	49	—	—	—	3	41	3	119	4·4	—	46	—	3	4	1	6	60	2·2	396	15·5
Poplar	162,290	2	41	23	—	—	—	2	19	1	88	5·7	—	27	1	—	1	1	2	32	2·1	250	16·6
South Districts.																							
Southwark	191,595	—	54	35	—	1	—	—	25	1	116	6·3	—	2	—	2	8	—	5	17	0·9	260	14·8
Bermondsey	125,840	—	35	21	—	—	—	2	11	—	69	5·7	—	6	1	2	8	—	1	18	1·5	181	15·4
Lambeth	298,032	—	58	23	—	4	—	2	18	1	106	3·7	—	6	3	2	9	1	5	26	0·9	354	12·8
Battersea	167,765	—	27	14	—	3	—	1	13	—	58	3·6	—	7	—	—	1	—	2	10	0·6	175	11·7
Wandsworth	313,389	—	72	49	—	7	—	5	21	—	154	5·1	—	7	1	5	9	1	5	28	0·9	295	10·3
Camberwell	261,407	—	26	24	—	—	—	—	20	—	70	2·8	—	12	—	2	7	—	3	24	1·0	298	12·3
Deptford	109,475	—	23	10	—	—	—	—	15	—	48	4·6	—	2	2	1	3	1	3	12	1·1	137	13·8
Greenwich	95,982	—	22	25	—	1	—	1	13	—	62	6·7	—	1	—	1	1	—	2	5	0·5	101	11·2
Lewisham	161,677	—	35	20	—	1	—	1	6	—	63	4·1	—	2	1	1	2	—	1	7	0·5	160	10·7
Woolwich	121,509	—	53	23	—	—	—	—	3	—	79	6·8	—	3	1	1	1	—	2	8	0·7	120	11·0
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar General's weekly returns; these two columns are therefore omitted from the Table.

in the 77 English towns. These 27 deaths from the principal epidemic diseases in the Irish towns last week included 10 from infantile diarrhœa, 8 from measles, 5 from diphtheria, 2 from whooping-cough, and one each from enteric fever and scarlet fever, but not one from small-pox. The 10 deaths of infants under two years of age attributed to diarrhœa showed a slight further increase upon recent weekly numbers, and included 5 in Belfast and 4 in Dublin. The 8 fatal cases of measles exceeded the number in the previous week by 6, and were all recorded in Dublin. Of the 5 deaths from diphtheria, 3 occurred in Dublin and 1 each in Limerick and Queenstown. Both the fatal cases of whooping-cough and the death from enteric fever were recorded in Dublin. The 48 deaths referred to diseases of the respiratory system in the 22 towns last week showed a decline of 16 from the number in each of the two preceding weeks. Of the 297 deaths from all causes in the 22 towns last week, 106, or 36 per cent., were recorded in public institutions, and 7 were referred to different forms of violence. The causes of 12, or 4·0 per cent., of the deaths registered in the 22 towns during the week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent. in the 77 largest English towns, and was equal to 3·2 per cent. in the eight principal Scotch towns.

VITAL STATISTICS OF LONDON DURING MAY, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·3 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·4, 4·3, and 4·1 per 1000 respectively. The lowest rates last month were recorded in the Cities of London and Westminster, and in St. Marylebone, Hampstead, and Camberwell; and the highest rates in Holborn, Finsbury, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. Two cases of small-pox, both belonging to Poplar, were notified in each of the last two months. The prevalence of scarlet fever showed a slight increase compared with that in other recent months; this disease was proportionally most prevalent in Fulham, Chelsea, Poplar, Southwark, Bermondsey, Wandsworth, Greenwich, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1224, 1012, and 1018 at the end of the three preceding months, had risen again to 1128 at the end of last month; the weekly admissions averaged 160, against 142, 124, and 127 in the three preceding months. Diphtheria was slightly more prevalent than in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Hammersmith, Holborn, Finsbury, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 801 diphtheria patients at the end of last month, against 902, 881, and 827 at the end of the three preceding months; the weekly admissions averaged 100, against 120, 107, and 97 in the three preceding months. The prevalence of enteric fever showed a decline from that recorded in any previous month this year; this disease was proportionally most prevalent last month in Kensington, St. Pancras, Holborn, Battersea, and Wandsworth. There were 35 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 41, 32, and 22 at the end of the three preceding months; the weekly admissions averaged 5 in each of the last two months. Erysipelas was proportionally most prevalent in Stoke Newington, Finsbury, Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Greenwich. The 29 cases of puerperal fever notified during the month included 5 in Wandsworth, 4 in St. Pancras, 4 in Bethnal Green, 3 in Stepney, and 2 each in Poplar, Bermondsey, and Lambeth. The 8 cases notified as cerebro-spinal meningitis included 3 in Stepney.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending June 3rd the deaths of 5483 London residents were registered, equal to a corrected annual rate of 13·2 per 1000, against 19·0, 17·3, and 16·7 in the three preceding months. The death-rates last month ranged from 10·3 in Wandsworth, 10·5 in Stoke Newington, 10·7 in Lewisham, 11·0 in Woolwich, 11·2 in Greenwich, and 11·5 in Paddington and in Hampstead, to 15·2 in Bethnal Green, 15·3 in Holborn, 15·4 in Bermondsey, 15·5 in Stepney, 15·6 in Hammersmith, 16·6 in Poplar, 18·4 in Shoreditch, and 18·8 in the City of London. The 5483 deaths from all causes included 206 from measles, 18 from scarlet fever, 42 from diphtheria, 136 from whooping-cough, 6 from enteric fever, and 78 (among children under two years of age) from diarrhœa and enteritis. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Hampstead, Holborn, Battersea, Greenwich, and Woolwich, and the highest rates in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 206 deaths from measles were 41 below the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. The 18 fatal cases of scarlet fever showed a decline of 29 from the corrected average number, and included 3 in Islington, 3 in Lambeth, 2 in St. Pancras, and 2 in Deptford. The 42 deaths from diphtheria were 8 below the corrected average number; this disease was proportionally most fatal in Hammersmith, St. Pancras, Bermondsey, and Wandsworth. The 136 deaths from whooping-cough were 49 fewer than the corrected average number; among the metropolitan boroughs the greatest proportional mortality from this disease was recorded in Paddington, Kensington, Hammersmith, the City of Westminster, Shoreditch, and Bermondsey. The 6 fatal cases of enteric fever were 3 below the average, and belonged respectively to Hackney, Stepney, Poplar, Lambeth, Wandsworth, and Deptford. The 78 deaths from diarrhœa and enteritis among children under two years of age included 7 in Shoreditch, 6 in Islington, 6 in Stepney, 5 in Southwark, 5 in Lambeth, and 5 in Wandsworth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 24·2 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: J. W. W. Stanton to the *Vivid*, additional, for the *Colossus*, and to the *Colossus*, on commissioning; and L. Kilroy to Plymouth Hospital.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Francis H. Treherne, from the Royal Army Medical Corps, to be Colonel, vice F. B. Maclean, retired (dated June 13th, 1911).

ROYAL ARMY MEDICAL CORPS.

Lieutenant Colonel John Battersby, Half-pay List, is placed on retired pay (dated May 19th, 1911).

Lieutenant-Colonel James R. Forrest retires on retired pay (dated June 21st, 1911).

The undermentioned officers, from the Seconded List, are restored to the establishment:—Captain Geoffrey W. G. Hughes (dated June 16th, 1911). Lieutenant John S. Levack (dated May 26th, 1911).

The under-mentioned Majors to be Lieutenant-Colonels:—Frederick J. Morgan, vice F. J. Jencken, promoted (dated May 12th, 1911); William H. Horrocks, vice R. P. Bond, retired (dated May 19th, 1911); Charles H. Hale, D.S.O., vice W. B. Thomson, retired (dated June 7th, 1911); Hugh C. Thurston, C.M.G., vice F. H. Treherne, C.M.G., promoted (dated June 13th, 1911).

Colonel R. I. D. Hackett has taken up duty as Principal Medical Officer of the Karachi Brigade, Southern Army, India. Brevet-Colonel R. S. F. Henderson, K.H.P., secretary to the Principal Medical Officer, His Majesty's

Forces in India, has arrived home on three months' leave of absence. Lieutenant-Colonel C. E. Faunce, from the Military Hospital at Gibraltar, has joined for duty at Chatham. Lieutenant-Colonel W. E. Berryman, on completion of a tour of service in India, has been appointed for duty at Woking. Lieutenant-Colonel J. F. M. Shine, at present serving in India, has been granted leave of absence home until Oct. 31st next. Lieutenant-Colonel G. E Hale, D.S.O., medical inspector of recruits in the Eastern Command, has taken over charge of the Station Hospital at Mhow. Lieutenant-Colonel R. G. Hanley, from the Dublin District, has arrived for a tour of service in South Africa. Major G. J. Stoney Archer has taken up duty as Specialist in Advanced Operative Surgery to the Burma Division. Major J. Girvin has been transferred from the Station Hospital at Deolali to Ahmednagar. Major T. H. J. C. Goodwin, D S O., from Quetta, has joined at Aden. Major H G F. Stallard has been appointed to officiate as Secretary to the Principal Medical Officer, His Majesty's Forces in India, during the absence on leave of Brevet-Colonel R. S. F. Henderson, K.H.P. Major F. R. Buswell, who is serving in India, has been appointed to officiate as Principal Medical Officer of the Jubbulpore and Jhansi Brigades during the absence on leave of Colonel S. C. B. Robinson. Major M. P. C. Holt, D.S.O., surgical specialist Third (Lahore) Division, has been transferred from Ambala to Kasauli. Major G. S. Crawford, on return from duty at Malta, has been appointed to the Irish Command. M jor W. H S. Nickerson, V.C., from York, has been posted for duty to the Second (Rawalpindi) Division. Major C. W. R. Healey, at present serving in India, has been granted three months' leave of absence. Major F. Smith, D.S.O., sanitary officer of the Third (Lahore) Division, has been granted an extension of his Indian tour of service for one year by H.E. the Commander-in-Chief. Major E. C. Anderson has been transferred to the Fourth (Quetta) Division and appointed to command the Station Hospital at Karachi. Captain A. E. F. Hastings, from Allahabad cantonment, has joined for duty at Darjeeling. Captain R. A. Cunningham, from Agra, has been appointed Specialist in the Prevention of Disease to the Eighth (Lucknow) Division and placed in charge of the Brigade Research Laboratory at Allahabad. Captain A. Dawson has been selected to take charge of the Enteric Fever Convalescent Depôt at Wellington, Madras Presidency. Captain F. W. W. Dawson, from Dundalk, has joined at Dublin. Captain T. H. Gibbon, on return from a tour of service at Malta, has been appointed to Canterbury. Captain R. L. Argles has been granted one year's extension of his tour of service in India by H.E the Commander-in-Chief. Captain A. C. Duffey, from the Dublin District, has joined at Rawalpindi.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotion:—Captain to be Major: William Henry Dickinson (dated Jan. 28th, 1911).

The King has also approved of the retirement of Lieutenant-Colonel Lionel John Pisani (dated June 10th, 1911).

Colonel F. C. Reeves has arrived home on leave of absence from India. The services of Lieutenant-Colonel R. B. Roe, civil surgeon of Nagpur, have been placed at the disposal of H.E. the Commander-in-Chief of India by the Home Department. Lieutenant-Colonel J. M. Crawford, civil surgeon of Benares, has been appointed to hold medical charge of the Mirzapur District during the absence of Major W. S. Wilmore on deputation at the Central Research Institute, Kasauli. Lieutenant-Colonel J. T. Daly has been granted leave of absence home from India until Oct. 18th next. Lieutenant-Colonel H. Hendley has been temporarily reverted to military duty from civil employment. Lieutenant-Colonel A. W. Dawson has been granted leave of absence home for seven months. Major F. D. S. Fayrer has taken up duty as Agency Surgeon at Baghalkhand. Major A. Gwyther, civil surgeon at Saran, has been appointed to officiate as Civil Surgeon at Howrah. Captain J. Taylor has been appointed to officiate in charge of the King Institute, Madras, in succession to Captain J. Patton. Captain M. F. Reaney has been appointed for permanent duty under the Government of the Central Provinces. Captain G. McG. Miller has been granted six months' leave of absence home from India on the recommendation of a medical board. Captain W. W. Jeudwine, officiating civil surgeon attached to the Mayo Hospital at Lahore, has been appointed to officiate as Civil Surgeon at Mooltan in succession to Lieutenant-Colonel A. Coleman, transferred to Rawalpindi. Captain E. J. C. McDonald, district plague medical officer at Jhelum, has been transferred in the same capacity to the Gurgaon District. Captain W. M. Anderson has been appointed Civil Surgeon to Dehra Ismail Khan. Captain W. E. R. Williams and Captain H. P. Cook have arrived home on leave of absence from India. Captain A. E. Grisswood, district plague medical officer at Hoshiarpur, has been transferred in the same capacity to the Delhi District. Captain C. Holroyd has been selected for appointment to the Jail Department in the Bengal Presidency.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Philip S. Vickerman is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Albert R Henchley reverts at his own request to the rank of Major (dated June 16th, 1911). Major Albert R. Henchley resigns his commission (dated June 17th, 1911).

Attached to Units other than Medical Units.—Major David R. Oswald resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated June 17th, 1911). Captain Thomas H. Thomson resigns his commission (dated June 17th, 1911).

For Attachment to Units other than Medical Units.—Robert Hill Shaw to be Lieutenant (dated May 20th, 1911). Robert Proudfoot to be Lieutenant (dated May 20th, 1911). Captain James Walker, from the 1st Lowland Field Ambulance, to be Captain (dated May 26th, 1911). Joseph Bernard Dawson to be Lieutenant (dated June 17th, 1911).

THE TERRITORIAL DECORATION.

Royal Army Medical Corps.

The King has conferred the Territorial Decoration upon Major David Robert Oswald, Retired List.

DEATHS IN THE SERVICES.

Deputy-Surgeon-General Arthur Guy Elkington, late of the Brigade of Guards, on May 31st, at Appin, Farnborough Park, Hants, in his 79th year. He received his first commission in the Army Medical Service in 1853, and retired in 1887. He served in the Crimean campaign, 1854-5, and took part in the battles of Inkerman, where he was wounded, of Balaclava, and throughout the siege of Sevastopol (mentioned in despatches, British and Turkish medals, and the Medjidie of the Fifth Class).

Surgeon William Forrest Archibald, of the Royal Naval Hospital, Chatham, was drowned near Maidstone on June 23rd whilst boating with two brother officers. The deceased officer was appointed surgeon in 1906.

THE CORONATION HONOURS.

A list of the honours bestowed upon members of the medical profession will be found in another column, page 33. We congratulate in the name of the profession the large proportion of members of the services who find a place in that list.

THE ORDER OF ST. JOHN OF JERUSALEM.

The Duke of Connaught, Grand Prior of the Order of St. John of Jerusalem, will inspect the Corps and Divisions of No. 1 District ("the Prince of Wales's Corps"), St. John Ambulance Brigade, in Hyde Park on July 22nd. The General Assembly of the Order of St. John of Jerusalem will be held at St. John's Gate, Clerkenwell, on July 6th. The annual commemoration service will take place at 2.15 P.M. on the same day.

The King has given His Majesty's Royal licence and authority to Major Frederick Fitzgerald Carroll, R A.M.C., to accept and wear the Fourth Class of the Imperial Ottoman Order of the Osmanieh, which has been conferred on him by His Highness the Khedive of Egypt.

PURE CIDER.—At a meeting of the Devonshire Farmers' Union, held recently, the adulteration of cider came under discussion, and it was unanimously resolved to petition the Government to include cider in the new Food and Drugs Bill, and to prohibit the sale of any drink under the name of cider which did not contain 90 per cent. of apple juice.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE BILL.

To the Editor of THE LANCET.

SIR,—In his letter on the National Insurance Bill Sir Alfred Pearce Gould rightly insists on attention to "the underlying principles involved." But in expressing the opinion (tentatively endorsed in your leading article in the last issue of THE LANCET) that the profession ought to say, "We will have nothing whatever to do with contract practice or *per capita* payments," he seems to me not only to make the unwarranted assumption that the evils of contract practice are inherent to the system, but also to ignore the main object of Part I. of the Bill, which is "to provide for *insurance* against loss of health and for the prevention and cure of sickness" for a large section of the "working population."

The principle of insurance implies the devolving of individual risks upon some body which, in accepting them in large numbers at a fixed rate, guards itself against loss by the operation of the laws of average. It is no doubt possible that with regard to "medical benefit" the State might be that body, charging insured persons a periodical premium, paying medical practitioners by fixed fees according to the amount of work done by them in each case, and taking the risk of loss. But such a scheme would be unsound. Payment per visit, by a third party, would inevitably tend to extravagance, as there would be no inducement either to patient or to attendant to prevent doctoring from becoming excessive—a luxury as well as a necessity. No system of artificial control could be trusted to prevent the loss which would then fall on the State. This difficulty is removed by the medical practitioner's contracting for his attendance. He then accepts the insurance risks, but is safeguarded from inadequate remuneration by receiving from the State, which collects the weekly contributions of employer and employed, an equitable sum *per capita*. The amount of that capitation fee (or insurance premium) is, as Dr. Carruthers points out, a matter for actuarial calculation, based on ascertainable statistics. The total remuneration should be on the average equal to or (to compensate him for bearing the risk) somewhat in excess of the fees which the medical practitioner would have received for the same work in private practice.

The advantages of such an arrangement, if made on fair and liberal lines, should be great to all concerned. The sick poor would obtain an efficient medical service, not at the expense of the medical profession, but by the help of the contributions of those whose good health exempts them from the need of medical benefit. Medical practitioners who chose to take this class of practice would receive, through the State, payment at least equal to their present experience with the same class of patients, and without the annoyance of collecting it. It would be to the immediate interest of the medical attendant to get his patients well as safely, quickly, and agreeably as possible. It would further be to his interest to prevent his insured clients from falling ill, and thus he would become an active power in preventive medicine. In private practice the prevention of disease tends to reduce the pay as well as the work of the medical practitioner. Under such a contract system its tendency would be to reduce his work only. In all this not only his patients but the public also would participate. Moreover, it would be as easy to adapt such a scheme to the limit of £160 a year as to that of £2 a week, but with the higher limit the capitation fee would, of course, work out higher.

"Payment for service rendered" is no doubt a just system, but, on the one hand, we must not forget that medical fees are only acknowledgments for what is often of quite inestimable value to the patient, and, on the other hand, we must recognise that under the contract system, just as in private practice, it is in reality the service rendered which is paid for. The Government Bill is at present so entirely unsatisfactory as regards its provisions for medical benefit that the only course open to the profession is to decline to serve under such conditions. Its amendment, so as to render it a satisfactory and valuable measure, should not, however, be beyond the powers of enlightened statesmanship, provided sufficient time is allowed for its full consideration. The well-being of the community is the prime consideration. If we loyally put that before any class interests the public will soon realise that its health and true interest depend very largely on an efficient medical service, and that efficiency and good workmanship cannot be secured on a national scale without just and even generous treatment of the medical profession by the State.

I am, Sir, yours faithfully,

Sheffield, June 26th, 1911. R. J. PYE-SMITH.

To the Editor of THE LANCET.

SIR,—Would you be good enough to publish the enclosed communication and abstract from a memorandum prepared some months ago after long consideration of the problem by a committee of general practitioners, it being considered opportune?

In the leading article in your issue for June 24th you urge the medical profession to consider at this crisis whether by the means of payment for services rendered a way to an honourable settlement of the difficulty between itself and the Government might be found. This committee is convinced that this proposal does give the means desired, and is pleased to note that the influence of your journal can be counted on for that purpose.

A detailed scheme embracing the principles contained in the accompanying memorandum will no doubt be placed before the profession shortly for its consideration. For the moment the medical profession is only concerned to see that nothing is left in the Bill when it becomes an Act to make the adoption of the principle of payment for services rendered impossible. I am, Sir, yours faithfully,

E. ROWLAND FOTHERGILL, Honorary Secretary.

Brighton, June 26th, 1911.

[ENCLOSURE.]

NATIONAL INSURANCE BILL.

We, the undersigned, desire to submit the following memorandum which contains our views with regard to the mode of remuneration of those members of the medical profession engaged in the domiciliary treatment of the beneficiaries under the scheme, and at the same time to add that the views therein expressed are those held in all parts of the United Kingdom by a very large and important portion of the medical profession, probably by a great deal more than half of the total number.

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JOHN BROWN, M.D.
W. H. BRAZIL, M.D., B.Sc.
JOSEPH H. KEAY, M.D., M.A., Chairman of the committee.
E. ROWLAND FOTHERGILL, M.B., B.S., Honorary secretary to committee.

(1) THE RISKS OF THE INSURANCE.

The State, being the "Insurance Company," should be responsible for these; no endeavour being made to shift them on to the medical profession. Amongst the risks, the following can be enumerated:—

(*a*) The extra medical attendance required in the event of a long strike with the accompanying deterioration of the health of those on strike as well as of their families.

(*b*) The extra medical attendance required on the unemployed and those dependent on them, in consequence of the vicissitudes of fashion or trade over which the working classes have no control.

(*c*) The extra medical attendance required in consequence of an epidemic of infectious or contagious disease.

(*d*) The advancement of social legislation with its bearing on the health of the nation, necessitating increased duties being required of the medical profession.

(*e*) The increase in the cost of the necessary appliances and in modes of treatment available in general practice, in consequence of the advances made in medical and surgical knowledge.

(*f*) The present ignorance, through want of reliable information, as to what the actual cost of an efficient medical service under a complete Invalidity Scheme would be. This ignorance can only be met by means of years of practical experience.

(*g*) The ignorance, which of necessity must exist for some time, as to how legislation for invalidity insurance will affect previous legislation—e.g., Workmen's Compensation; Employer's Liability; Examination and Treatment of School Children; Medical Assistance under the Poor-law.

(2) PAYMENT FOR ATTENDANCE, WITH A MAXIMUM LIMIT OF LIABILITY TO THE STATE AND THE EMPLOYER.

The beneficiary being the person, who in the first instance required the attendance, it should be made to his interest while not depriving himself of necessary attendance to keep such attendance within reasonable limits. The doctor should also be prepared, by taking a limited amount of risk, to help the State to inaugurate a scheme which would have so many advantages while at the same time eliminating the many disadvantages attached to other proposals.

The proposal is that:—

(1) Every beneficiary should be entitled to claim attendance for isolated occasions on a fixed tariff.

(2) That arrangements should be made with the doctor of the beneficiary's own choice by which a periodical medical examination should be obtainable. This would be the means used for the prevention of disease.

(3) That the beneficiary should have an interest in keeping the attendance within reasonable limits; but such incentive not to become a deterrent from necessary attendance being requisitioned.

(3) MACHINERY FOR OBTAINING ATTENDANCE.

(*a*) Vouchers supplied to the beneficiaries on application to some authorised person.

(*b*) Vouchers to be issued for varying periods not exceeding four weeks, and to be valid for a single illness only.

(*c*) Items of attendance and charges to be entered on the back of the voucher, which is to be returned at the expiration of its validity.

(*d*) In cases of emergency the attendance to be given at once, and a voucher obtained at the earliest possible opportunity after the first attendance.

If it is thought necessary, apart from the foregoing system of vouchers, to provide safeguards against over-attendance on the part of the doctor, the following methods, which depend on different principles, are submitted for consideration:—

(*a*) Medical supervisors as in France, as also in England for vaccination (Government inspectors), and for Friendly Societies (sick visitors).

(*b*) For every attendance of the doctor a small deduction to be made from sick pay, and in the case of patients not drawing sick pay, a small increased contribution might be levied for a sufficient number of weeks.

(*c*) That if a beneficiary is receiving what seems to be excessive medical attendance, he be required to submit to a special medical examination and report.

(4) THE FOLLOWING ARE THE ADVANTAGES.

To the State:—

(1) The principle of payment for work done is the most equitable and satisfactory.

(2) It conduces to smoothness of working between doctor and patient.

(3) The cost to the State could be no more than under an *adequate* capitation grant.

(4) As all classes of doctors would be willing to participate, the more efficient attendance guaranteed by this system will lessen the amount of sickness. It follows, therefore, that the cost of this method would be less in future years than under the capitation system.

(5) It will tend to increase the efficiency of the medical profession.

(6) The inclusion of women and children could be arranged without any further adjustment.

(7) Inclusion of chronic invalids, those engaged in hazardous employment, those ill through personal misconduct and the aged can be arranged for on this, the only satisfactory, basis.

To the medical practitioner:—

(1) He will be relieved of the onus of giving unlimited service for a limited premium.

(2) The trivial consultation and the unnecessary call will not be a continual source of annoyance.

(3) The remuneration will be in proportion to work done.

(4) There will be fewer unremunerative patients.

(5) The relation of patient and practitioner will be more cordial and personal.

(6) The freedom of the private practitioner will be retained.

(7) If additional duties should be required under the advance of social legislation or because of an epidemic, trade strike, unemployment, or any advance in medical or surgical knowledge, the necessary agreement between the State and the profession would need no further adjustment.

(8) The doctor in attendance on clubs would gain by increased fees more than he would lose by any transference of patients.

To the Patient:—

(1) He can command the advice of any practitioner at any time and at any place whether resident there permanently or temporarily.

(2) He can change his doctor, as in private practice.

(3) He is assured of receiving adequate attention.

(4) He has all the advantages of a private patient.

(5) His self-respect is maintained, as services rendered are paid for.

(6) He is made personally interested in the good health of those dependent upon him.

Alternative proposals have been placed before the medical profession. The committee would very briefly name some of the practical objections to each one. Most of the advantages of payment for attendance are impossible under either of the other proposals.

(5) WHOLE-TIME MEDICAL OFFICERS.

The practical objections to the success of this proposal are:—

(*a*) Those beneficiaries who up to the present have paid for a doctor of their own choice would resent being bound to engage certain doctors and would contract out; if public opinion even allowed such a scheme to become law.

(*b*) The institution of a bureaucratic doctor in the place of the family doctor would tend to officialism; and he, having duties placed on his shoulders of a gradually increasing amount, would lose sight of the primary object of his existence—the efficient treatment of those committed to his charge.

(*c*) It would be immaterial to the doctor how long the beneficiary remained on the sick list; and if he were urged to return the patient as soon as possible, there would often follow great injustice to the deserving and honest sick.

(*d*) The doctor would claim the right to a participation in the superannuation scheme, with a resulting great increase of liability on behalf of the State.

(*e*) The more experienced, independent doctor would decline to enter the service or would leave it as soon as possible, and thus the State would become dependent on a doctor of limited experience.

(*f*) Being forced to accept the services of a doctor not of their own choice, the beneficiaries would criticise him more severely, and be constantly complaining to the State Department.

(6) CAPITATION PAYMENT ON BEHALF OF A BENEFICIARY TO A DOCTOR SELECTED.

The practical objections to the success of this proposal are:—

(*a*) The more experienced independent doctor would decline to enter into any agreement with or on behalf of a beneficiary to take over the insurance risks rightly belonging to the State (see Section (1) above) or would cancel such agreement as soon as he was established, or farm the attendance out to a newly-qualified assistant and thus the State would become dependent on a doctor of limited experience.

(*b*) The doctor being paid a fixed sum would reduce the amount of his attendance to the least possible. As it is impossible for anyone except a doctor to define in a specific case what would be inefficient attendance, neither the beneficiary, the employer, nor the State would become aware of such beyond the information obtainable over a period of years as to the improvement or otherwise of the health of the nation as a whole. Under-attendance is a direct injury to the national health.

(*c*) The doctor would not be competent to give all the medical and surgical services required, and therefore the State would have to contract for these services on a higher scale. The original doctor, having a fixed payment, would transfer chronics, aged, those ill through misconduct, as well as exacting beneficiaries, as soon as possible to these specialists or to Hospitals, Infirmaries, Sanatoria, or other institutions, with a greatly increased cost to the State in consequence.

(*d*) Special arrangements would have to be made for attending those ill through misconduct, or who moved into another neighbourhood, whether at the time ill or in good health, or temporarily away on holiday. This could not be done on a capitation basis which would be equitable to the State, the doctor, and the beneficiary.

(*e*) There is no means to prevent vexatious calls being made on the services of a doctor; and if extra charges were allowed, there is no security for their payment.

(*f*) If a beneficiary became a chronic invalid or "aged" or ill through misconduct, the doctor would decline to renew the agreement on the old terms, and the State would thus be compelled to make other special arrangements.

(*g*) There is no incentive to a beneficiary to look after his own health or the health of those dependent on him, as he is secured against the cost of any consequent medical attendance.

(*h*) Those doctors who at present have some 6,000,000 of the proposed beneficiaries in sick clubs would have no incentive to transfer them into a State scheme, and would actively assist those persons and the Permanent Friendly Societies in making the scheme unworkable.

(*i*) The relative certainty of a steady income held out as an inducement to a doctor is only in fact a deferred payment of his earnings.

It is taken for granted that the State would be desirous to elaborate a medical service which in order to prove efficient would insure:—

(*a*) That prevention of disease and prompt and efficient attendance on the sick were always kept prominently in view.

(*b*) That there should be no coercion in dealing with several million persons who will become beneficiaries under the scheme, and who up to the present time have engaged privately a doctor of their own choice on terms mutually arranged. Any coercion would only lead to contracting out of the scheme and its consequent failure from a public health point of view.

(*c*) That the sick beneficiary would be returned to work with the least possible delay, the scheme therefore being approved of by employers of labour and the permanent benefit societies and other bodies giving sick pay whose active coöperation it would under such circumstances be likely to receive.

(*d*) That the beneficiary, whether at home or on a holiday, or on changing his address would be in benefit at all times and in all places (no matter what form of illness he had) and could at once requisition the services of a medical man if required.

In order to insure these four points it becomes necessary to secure the hearty coöperation of the whole of the medical profession.

The committee is of opinion that this coöperation can be secured only by adopting the principle of payment for services rendered.

To the Editor of THE LANCET.

SIR,—On the eve of the recent meeting of the delegates of the British Medical Association, not being a member I sent the following suggested resolution to the Secretary:—

That inasmuch as contract practice as at present carried on is degrading to the medical profession and injurious to the best interests of the public, the British Medical Association calls upon all practitioners holding friendly society or other club appointments to at once resign them; that a special levy, either compulsory or voluntary, be made on all members for the purpose of sustaining such practitioners in their action and indemnifying them against pecuniary losses; and that the coöperation of all other professional organisations be invited in carrying out the above recommendations.

This was a fighting resolution, and if it had been adopted the end of contract practice under Friendly Society control might have been within sight. Further, it would have strengthened Mr. Lloyd George's hands, for he would then have been able to say to the Friendly Societies, "You see, you have so badly treated the medical profession in the past that you are now without doctors, so that your only hope is to leave the matter in my hands and I will try to arrange an efficient medical service for you." Thus the battle would have been won, after one decisive action, and we would have been able to arrange our own terms.

But the army—horse, foot, and artillery—assembled on the banks of the Thames broke up camp, and now we are sniping. Being a political fighter all my life I could understand a fighting attitude on broad principles such as these, and Sir A. Pearce Gould in your columns justly lays stress on principles; but has not that chance gone never to return? (And parenthetically we may well ask if the British Medical Association feared that the holders of club practices would not toe the line?) Nevertheless, it behoves us now to take stock of our position. During 23 years' experience in cash practices in working-class districts in London, and never having there held any Friendly Society or club appointments, I have often observed how the medical men holding such appointments have gradually absorbed many of the private patients of their brother practitioners; and I can quite conceive if this went on long enough hundreds and thousands of such patients would have been added to the club lists of such practitioners without any protest on their part. And if the National Insurance Bill falls through no doubt these holders of Friendly Society appointments will continue to gain even a greater accession of club members in the future to the loss of private practitioners.

Next, let us suppose the Chancellor had given his colleague, Mr. John Burns, the first start in the series of social reform schemes anticipated, and that Mr. Burns had initiated legislation on the lines recommended in the Minority Report of the Royal Commission on Poor-law. How would men such as myself have fared? So far as I can see—and I called attention to the matter last year—a very large proportion of my patients would under the proposed sanitary service have been virtually pauperised, and many would have been taken out of my hands without the prospect of my receiving one penny compensation for them. I should instead have had to pay additional rates and taxes for their treatment. Under the National Insurance scheme, however, I am to receive a capitation fee for the greater number of these cases. We apparently all have short memories, but let us go back to last year only, when we shall find on the public platforms, associated with the authors of the Minority Report, many well-known members of the medical profession warm advocates of such legislation. In the columns of THE LANCET of July 23rd, 1910, p. 229, there was published from the pen of Mr. H. Beckett-Overy and another a strong appeal to the medical profession, urging the acceptance of those recommendations, so that legislative effects could at once be given to the Minority Report. At the time I wrote a letter, published in THE LANCET of Sept. 3rd, p. 760, protesting against what I held to be the exploitation of the profession advocated by the medical supporters of the Minority Report, but my recollection of the matter is that many of us would have been thrown to the wolves then without awakening any very great protest. And to-day what is our position? Nowhere in the United Kingdom can we shut our eyes to the precarious condition of the bulk

of general practitioners brought about by so many and diverse causes. Here, in the East End, as in other parts of London where I have practised, almost every person can go to hospitals and receive gratuitous treatment, and it is practically impossible to have any continuity in the treatment of cases amongst the working-class. In all fairness, then, I ask, What does the Bill offer us who are placed in this position?

So far as I can see it gives us payment for thousands of cases which at the present moment are receiving gratuitous treatment from one source or another, and for which we do not receive a penny. Personally, I think this is something to cause us reflection. Both political parties are pledged to an Insurance Bill and to Poor-law reform. Both schemes must come whoever is in power. On the main and vital points, almost unanimously put forward by the medical profession, we want simple justice and fair play. But I think as we are placed now it will be deplorable if instead of mending the National Insurance Bill we destroy it. The Chancellor has virtually given way on the point of free choice of doctors for the insured, and I have no doubt this point as well as others will be cleared up during the Committee Stage. I am sure then he would get over most of his other difficulties with us now, if he adopted, even as an alternative plan, the system of payment for work done as under the National Deposit Friendly Society with modifications for different localities and work. This would not make his scheme more costly and would go far to satisfy the profession. I have every hope that he will eventually be got to take this view and so assure the smoother passage of his measure. And having thus met us in a broad and statesmanlike spirit, if he would then turn his great financial genius to devise a contributory plan, based somewhat on Poor-law or Civil Service lines, to give the State insurance doctors a pension or superannuation allowance, thus laying the foundation of a future State medical service, he would, when heat has been dispelled, be considered by the bulk of general medical practitioners not "as a villain but as a hero."

I am, Sir, yours faithfully,

Mile End, E., June 19th, 1911. M. S. HARFORD.

To the Editor of THE LANCET.

SIR,—It may seem superfluous for anyone to write further letters on the vexed subject of the National Insurance Bill, but I do not think too many can be written on a subject which strikes so deeply at the financial side of medical life. We, as a profession, are so limited by etiquette in our lines of communication with the lay public that it is difficult for any of us to let the aforesaid lay public know our thoughts and feelings on this or any other important subject. We can do as I am doing, write to your valued columns; but how far do we reach by doing so?

I, personally, have no club patients, with one exception, the National Deposit Friendly Society. This club pays for work done, not at an exorbitant rate, but one at which one does not feel one is prostituting one's profession. You are, as I see in this week's issue, as a result of a letter from "A. K." of York, aware of the tariff used by this club. And I would ask the profession why, if any one club can pay on this basis, the State cannot do the same? In my opinion this club is the only one which gets honest work done for its members, because it is the only club which treats the labourer as worthy of his hire.

Anything more absurd and totally iniquitous than the Chancellor's suggestion it is difficult to imagine with a normal brain. As at present drawn it means that a man may earn £3 per week or slightly more, and in consideration of a payment of 1/40th of this weekly wage can get medical attendance for a year. One hates to think it, but what one is afraid of is that the men who have been willing to prostitute our profession for a capitation fee of 4*s.* per annum may be equally willing to degrade it by undertaking work on the at present totally inadequate suggested basis. I, personally, can see no other way of dealing with this question than that suggested by "F.R.C.S. Eng. in General Practice." Why cannot the General Medical Council pass a resolution to make it "infamous conduct in a professional respect." Were they to do so, no medical man who respects himself or his profession would resent it, and it were better if those outside this limit were dealt with by the Council, and drastically.

This Bill, which is calculated to ruin many a medical man, is so flagrantly unfair and predatory that it is not easy to speak or write calmly about it, but the one thing to be prayed for is that any existing professional jealousies shall be buried and an absolutely unanimous resistance offered to it, either voluntarily or, if that is too much to hope for, compulsorily. Why in the name of all that is fair and just should medical men be exploited for the benefit of the unfit and unthrifty? What other trade or profession would submit to such oppressive legislation? I know of none. Medical attendance is no more necessary than bread or meat or any other marketable commodity. If the labouring classes spent less in beer and tobacco no need would have arisen for any legislation of this kind. I have many patients whose wages do not exceed 30*s.* per week, and yet they are willing and able to pay a decent fee for work done. The cases who are not are in the majority of instances alcoholic or gamble, and therefore are either out of employment or absolutely unthrifty. Are we to put a premium on this class of being? It would appear to be so.

Apart from its medical aspect, the Bill is obviously ill considered. It suggests paying 7*s.* per week to any employee for a given period as compensation for unemployment, but it does not provide for the first week! Any man may be out of work for a week, and that is the time he most urgently needs help; but the longer he is out of work the more probable is it that he is to blame in some way, probably C_2H_5OH. It must be obvious that in its present form it puts a premium on loafing. Whereas if they paid him 10*s.* the first week and reduced it one or two shillings per week to zero, unless some special cause existed, it would tend to make the man look for work.

I am, Sir, yours faithfully,

June 19th, 1911. ERNEST STRATFORD, M.R.C.S. Eng., &c.

To the Editor of THE LANCET.

SIR,—The General Medical Council demands a certain standard of education, with a minimum number of years' (i.e., five years) study in preparation for the same. The cost of this is well known to our profession. We do not start medical practice with the object of being pure philanthropists, but of obtaining in return for our work just and reasonable remuneration. Will any sane person suggest that 1*d.* per week for highly skilled work is any remuneration at all? I think not. I believe there is no profession which in the past has done so much gratuitous work as the medical. Surely there is hardly a man who, if he has been any length of time in practice, has not repeatedly attended patients for all sorts of illnesses without payment, and has not asked for any, but when the State comes in and *orders* him to work for no remuneration at all it is surely time to say, *No*, and that very decidedly. This Bill practically abolishes all fees below 5*s.*, and one of its effects would be greatly to increase the competition for this fee, with the result that in order to obtain work some would be tempted to accept 3*s.* 6*d.* or less, so the damage would not only fall on those who lose the lower fees. No *per capita* payment that could be suggested would be any suitable payment at all.

Is it a fact that any man lives on club practice alone? Has not the club or similar work in the past brought with it private work, and has not this been the paying part? Have not the Universities and the licensing bodies power to refuse to allow their graduates and diplomates to accept absurd payment? Has not the General Medical Council power to make it "infamous conduct"? Under this Bill hundreds of medical men would be ruined—the sale of practices made impossible, the life of a doctor would be one of endless toil for no reward, bad work would multiply by leaps and bounds, for it would be impossible to give adequate time to the cases. There are many thousands of people who can well afford to pay 2*s.* 6*d.* or 3*s.* 6*d.* fees who would have their treatment for nothing. The status of the profession would be lowered infinitely. We have but to be united, to resist in every way, and we *must* prevail. Our work is the highest and the noblest a man can do, and "the labourer is worthy of his hire." If there are any so poor (and we know there are some) that they cannot afford to pay small fees, let the State pay for them, but let us stand as one man—united, strong, resolute to have a just remuneration from those who *can* afford to pay. The suggestion of a limit of £2 or £3 a week is absurd; moreover, a distinction should be made between the married and the unmarried.

But let us not forget for a moment that the profession is passing through the gravest crisis in its history, and if once

any terms such as those suggested are accepted it may be impossible to alter matters, and the profession will be irretrievably ruined.

I am, Sir, yours faithfully,

REGINALD THORPE, M.R.C.S. Eng., L.R.C.P. Lond.

Elmbourne-road, S.W., June 21st, 1911.

To the Editor of THE LANCET.

SIR,—It does not seem to have been generally noticed that one of the "additional benefits" under the Insurance Bill is to be "medical treatment and attendance for any persons dependant upon the labour of a member." Schedule IV., Part II. (1). This as being one of the cheapest and most profitable benefits allowed will probably be largely claimed and will further diminish the remnant of private practice.

I am, Sir, yours faithfully,

F. MILTON, M.R.C.S.Eng., L.R.C.P. Lond.

Llanberis, June 18th, 1911.

To the Editor of THE LANCET.

SIR,—What the attitude of the medical profession should be towards the National Insurance Bill could not, I think, be put more clearly or with greater force than has been done by Sir Alfred Pearce Gould in his altogether admirable and well-reasoned letter to THE LANCET. It will appeal strongly, I think, to the large majority of medical men, who will feel much encouraged by his powerful influence and support. I have held Friendly Society appointments now for about a quarter of a century, and one great reason of our mistrust in them is, I think, that although they are well aware of the vastly improved conditions of the labouring and artizan classes, and of the higher rate of wages obtained in a large measure by the Trades Unions, they have not revised the rate of remuneration to their medical officers where it could possibly be avoided, or, if at all, only in a most grudging and inadequate manner. My "clubs" do not pay me on an average 5*s.* per head per annum, which is at the same rate my father before me held similar appointments. If a suggestion is made that the fees should be raised the reply has in effect always been, "Take it or leave it."

We well know that many of the members of the societies could as readily pay £1 per annum, or even more, as the ridiculous sum that we now have to accept for what is regarded as payment for our services. When we see these same members attending football matches, &c., in their thousands, often expending as much on a single outing as they offer their medical man for a year's services, we feel, indeed, that our present position with regard to them must be ended. I am, Sir, yours faithfully,

June 19th, 1911. DUNELM.

To the Editor of THE LANCET.

SIR,—The National Insurance Bill has an aim with which we are all in sympathy, to help the workers while they are well, to provide savings to bear the cost of sickness, in order that, relieved in their illnesses from privation and anxiety, they may the more quickly return to work and become again useful to the State.

Mr. Lloyd George thinks the Bill will improve the public health and reduce sickness, and that the contributors will find so much more work done, and so much more return for their work, that they will never miss their contributions. Sanguine, but not impossible. What he has so far arranged is that every employed contributor—that is, roughly, every labourer or artisan (seamen, too, are included)—shall pay 4*d.* a week, his employer 3*d.*, and the State 2*d.*, or 39*s.* a year, to meet charges for doctors' fees (medical benefit), sanatorium benefit, sickness benefit (10*s.* or 5*s.* weekly for not more than six months), disablement benefit (5*s.* weekly), maternity benefit (30*s.*), and other benefits if the scheme is a success. The *Times*, I may say, fears the disablement benefit most, pointing out that in Germany it is only payable to a man who has been four years insured, but in our Bill it is to be payable after the second year; while, further, in Germany it is not given to a man if he is still able to earn one-third of his former wages, but here if he is "rendered unfit," and no precise statement of the degree of disablement is given. *Punch* has called this the "Sickness Ensuring Bill."

It is of special importance to the medical profession to know what is to be expended out of that 39*s.* in payment of medical benefit. That is nowhere stated. The approved societies and the Local Health Committees are to make arrangements with us "for insured persons to receive attendance and treatment to the satisfaction of the Insurance Commissioners." Mr. Lloyd George has talked of 6*s.* for us, but there is nothing but his speeches to guide the new Local Health Committees. Several people lately have said we should press to have nothing to do with the Friendly Societies, but to have everything arranged with the Local Health Committees. It is important, then, to understand who these committees are. They will cover the same area as a county or city council and will be in number from 11 to 22, of whom 6 will be appointed by the county council, probably from members of the local sanitary authorities, 6 will be insured members of the Friendly Societies, 6 will be insured deposit contributors (who will be explained later), 4 more will be appointed by the county council, of whom two will be doctors; statutory representation of women has been promised. No group here seems likely to be markedly friendly to the medical profession. Over one-half are the insured who are to get all their own benefits out of the 39*s.* after the medical benefit has been deducted. They can make what arrangements they like with the doctors, if the Insurance Commissioners approve, but they are more likely to give a capitation rate than to pay by fee, as payment by fee is uncertain in amount and cannot be so accurately forecast, and if they have become liable for a bill larger than their estimate it must go through the Insurance Commissioners to the Treasury and to the county council who, if they think the expenditure reasonable and proper, sanction it, and proceed forthwith, each of them, to raise half the quantity by taxation. It is quite easy to see how little anxious anyone will be to regard extra expenditure as reasonable, and what a wigging the Local Health Committee will get if its expenditure is in excess of its estimate; so there seems little doubt but that payment will be made on the capitation principle, which is easy to plan out and estimate exactly beforehand. As to the deposit contributors, they will not be members of Friendly Societies, probably because they are bad lives, and Mr. Lloyd George has said that 6*s.* would not cover their medical attendance, so he will see they pay more.

Mr. Lloyd George is anxious to make the sick comfortable, to put them in the way of getting well quickly; he says he cannot ask any more from the workmen, that the employer cannot give more, and that he has himself precipitated something in the nature of a constitutional revolution in his desire to raise the six millions already wanted for this Bill. The only thing left to squeeze is the medical profession. He has never discussed what we consider the vital points. At the meeting of representatives of the British Medical Association, when the wage-limit was suggested for discussion, he raised a prejudice against anyone who should venture to bring that matter up. We took clubs at 4*s.* in the hope that as we grew older, people of larger income than our present employers, men with £3 and £4 a week, seeing our assiduity and our success, might engage us to attend them and their families at higher fees. But now these men are compelled to insure, and we must attend them at the club rate, which few of them have heretofore demanded.

The Chancellor has now made a categorical answer to the communication addressed to him by the General Medical Council, and has declared his willingness to make one of the Insurance Commissioners a medical man. This, of course, is a move in the right direction, for without a medical Commissioner we may be certain that the recommendations of any Advisory Committee upon medical matters would run considerable risk of inattention. Otherwise there was nothing in the Chancellor's reply to the General Medical Council that was likely to reassure the medical profession, or to arrest that shortage of medical men, the probability of which has been conspicuously alluded to by the Council.

I am, Sir, yours faithfully,

June 19th, 1911. NAVITA.

To the Editor of THE LANCET.

SIR,—The second reading debate on this Bill has demanded serious consideration, and many persons regret that the procedure in the House precluded the opportunity for an immediate and a direct refutation of the many unsatisfactory statements by the Chancellor of the Exchequer. Most of us are in favour of the principle of the Bill. I myself am a Liberal in politics, and as a Liberal I contested a Parliamentary county division and a borough. I was in general practice for seven years and subsequently in consulting practice, and

for over 20 years was physician (and finally senior physician) to a large hospital for tuberculosis and diseases of the chest. Most carefully have I read the whole Bill, the memorandum, and nearly all the speeches on the second reading, and the statement by the Chancellor that "there is one part of the Bill that has escaped the attention of every doctor in the land" is incorrect.

Mr. Lloyd George stated that "the doctors proceed in their criticisms on five assumptions, all which are erroneous." I cannot say that none have done this, but all those with whom I have discussed the measure in private and at public meetings have most assuredly not done so. They and I have proceeded on the assumption that while some of the profession were opposed to the system of capitation payment, a capitation arrangement is the only workable method; but we suggested that, in the event of a capitation grant being ultimately decided upon, it should be laid down that, seeing that neither capitation nor amount is mentioned in the Bill, the *minimum* capitation fee for ordinary professional attendance (excluding surgical operations and bacteriological and kindred and allied work) be fixed and stated in black and white in the Bill itself at not less than 10*s.* 6*d.* per annum, thus leaving it open to increase the amount according to the necessities of particular localities. We have never assumed any attendance on families, but only on individuals. We have advocated some kind of selection by patients of their medical attendants (subject to the latter being willing to attend them) being arranged for, a point absent from the Bill. Mr. Lloyd George, when he was told that free choice of doctor was not mentioned in the Bill, quoted Sec. 14: "Every approved society and Local Health Committee shall for the purpose of administering medical benefit make arrangements with duly qualified medical practitioners for insured persons to receive attendance and treatment to the satisfaction of the Insurance Commissioners from such practitioners." This clause might protect medical men against Friendly Societies if the words "every approved society and" were omitted and the majority of each Local Health Committee and of the Insurance Commission consisted of medical practitioners, but not otherwise. Mr. Lloyd George said that "not a doctor in the country has seen that." Why, Sec. 14 (1) is one of the many points round which the doctors' objections have clustered! He added, "They (the doctors) are free to make any arrangements which they like, which the *societies* like, of which the Insurance Commissioners approve." Did Mr. Lloyd George think he was speaking to children? How can "they" *make* the "arrangements" which they *like* when the Bill, so far, *provides* for their forming only one-ninth, or at most two-ninths, of the Local Health Committee, one-third of which is to be appointed by the "approved societies"?

Mr. Lloyd George is seeking to confer advantages on certain classes at the expense of the medical profession, and the members of the profession are not going to submit to this. Mr. Lloyd George said, "There is absolutely nothing *prescribed* in the Bill which would preclude the doctors from making any of the arrangements which they themselves have been recommending during the past few days." True, nor is there anything "prescribed" in the Bill that will protect their interests in any way, and this is what we complain of, particularly as the members of clubs and benefit societies are, to a certain extent, picked lives, for they are medically examined prior to admission and admitted only if medically fit, while the "Post Office" crowd that this Bill would let in might be all diseased at the moment of admission—the Bill says nothing to the contrary.

Later on Mr. Lloyd George clearly showed what his idea of the profession is. He admitted that he had to take some basis for medical attendance. He said, "I took the basis of 6*s.* because I understood from the report (British Medical Association, 1903) that this was the sum which was better than most doctors ever expected—better than most of them asked for—and I thought at any rate I would be on the right side if I put the amount at 6*s.*" What satisfied a group of club doctors whose private practices were left untouched does not necessarily now satisfy a whole profession whose complete private practices are threatened with ruin by compulsory insurance. If Mr. Lloyd George's speech, from which I have quoted, is to be taken as representing his scheme, the medical profession should simply reply, "It is a hollow and ridiculous sham," and without the coöperation of the medical profession the sham is doomed. The voice of the medical profession as a body calls for a basis not lower than 10*s.* 6*d.* per head—if there is a capitation payment—and this, too, for only ordinary medical treatment; for a free choice of doctors by patients if the doctors are willing to attend them; perfect independence of all so-called friendly societies; a strong medical proportion on all committees, boards, and on the commission; and all these points to be stated clearly in the Bill itself (and not to be left over "for consideration between next August and April," as Mr. Lloyd George asks—i.e., after the Bill has passed), otherwise Mr. Lloyd George will have difficulty in finding his "*best* medical attendance." I enclose my card.

I am, Sir, yours faithfully,

M.D., D.P.H., M.R.C.P. LOND. (BARRISTER-AT-LAW).

June 17th, 1911.

THE POSITION OF THE PRESENT REFORM MOVEMENT IN ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—I am very glad to read Mr. H. Nelson Hardy's letter on the above subject in THE LANCET of June 17th, partly because the criticisms it contains are obviously the outcome of a thoughtful study of the subject, and partly because I can, I think, put such considerations before him as will help him to see the points he raises in a somewhat different light. His first point would seem to be that as there are far more anæsthetic fatalities under registered than under unregistered administrators—a fact that is, of course, incontestable—there would be very little gained by the passage of an Act which would only protect the public against the risks of anæsthesia conducted by the latter class of practitioners. The second point, I take it, is that the use of methylated in contradistinction to ethylated or ethyl-alcohol chloroform, introduces a grave risk into chloroform anæsthesia. May I be permitted to deal with these two points separately?

One of the chief contentions of those who have interested themselves in the present reform movement is that, considering the knowledge we now possess as to the physiological and clinical effects produced by anæsthetics, the public is not sufficiently safeguarded against the risks of these agents. It is maintained, in fact, that a large number of the deaths which annually take place during general anæsthesia are preventable. As one fatality after another is chronicled Science seems to say to all whose ears are attuned to her utterances: "Provided anæsthetics are administered by persons whose general and professional education has been such as to entitle them to employ these powerful drugs, and provided also that such agents are administered according to those principles which recent experiment and clinical study have elaborated, the risks of artificially induced unconsciousness will be so slight that no one requiring surgical treatment need hesitate to incur them. But if ignorant and unqualified persons be permitted to take upon themselves these responsibilities, or if properly educated and qualified persons be permitted to use these drugs in such a way as to transgress the laws which are now known to be essential for safe anæsthetisation, painless surgery cannot possibly be practised without incurring grave risks from the necessary anæsthesia." Science bids us indeed put our house in order, and the sooner we begin to do so the better for the safety of the public and for the credit of our profession. The question is, Where shall we begin? Surely we must, in the first place, inspect the whole fabric from basement to attic, and decide whether any alterations of a structural nature are needed in order that the house, when completed, may conform to modern requirements. Should it be found that such structural changes are needed, surely we must start at the very foundations and work upwards. Let us not become the laughing-stock of posterity by repairing and improving the upper floors of our house before looking to these foundations. In other words, let us first see that all anæsthetics are placed in the hands of those who have been sufficiently educated to be entrusted with the responsibilities of anæsthesia; and when this has been accomplished by legal enactment let us direct our whole attention to improving the conditions under which anæsthetics are administered by registered practitioners. I freely admit that the most radical

alterations are necessary in the conditions under which anæsthesia is now conducted by those whose right to administer anæsthetics cannot be questioned. But let us deal with irregular practice first, and thus lay the foundation of a new and better order of things for the future.

The second point raised by Mr. Nelson Hardy is whether or not the use of *methylated* chloroform introduces a risk into chloroform anæsthesia which is absent when ethylated or ethylic alcohol chloroform is used. Mr. Nelson Hardy implies that this is the case, and in support of his thesis he mentions the fact brought to light some years ago that at a certain London hospital where methylated chloroform was used more anæsthetic fatalities had occurred in a certain number of years than at another hospital of about the same size where it was customary to use ethyl-alcohol chloroform. But if Mr. Nelson Hardy will go more carefully into the matter he will find that there was a far more important difference than this in the conditions under which anæsthetics were administered in these two institutions. In the one in which the larger number of accidents arose no special attention was paid to what may be termed the personal factor in anæsthetising—that is to say, anæsthetics were often entrusted to young and inexperienced administrators. In the other institution, however, in which accidents were far less frequent, anæsthesia was almost invariably conducted either by visiting or by resident anæsthetists. In order, however, that I may more completely dispose of the methylated chloroform bogey, let me add that this particular brand of chloroform is that which I have for some years past recommended for employment in hospitals with which I have been connected, and that at those hospitals at which it has been employed at my recommendation no cases have arisen in which this particular brand seemed in any way responsible for difficulties or accidents. Furthermore, with the object of being consistent and of making myself perfectly certain as to the safety and efficiency of Duncan and Flockhart red label methylated chloroform, I may say that I have myself used this chloroform for the last four years and without any of those results which Mr. Nelson Hardy and the believers in the danger of this brand regard as likely to arise.

I am, Sir, yours faithfully,

June 20th, 1911. FREDERIC HEWITT.

INQUEST FOLLOWING A CASE OF "HEALING" BY CHRISTIAN SCIENCE.

To the Editor of THE LANCET.

SIR,—Will you permit me to point out a mistake which has crept into your report of the inquest on Miss Nora Bohm, who died under Christian Science treatment? It is stated that the lady was living in a Christian Science "nursing home." As a matter of fact, there is no such thing as a Christian Science nursing home, and the house in which the patient was living was simply an ordinary house to which anyone could have gone. May I also say that the practitioner called in a doctor after the patient's death, as that is usual in the circumstances? No Christian Science practitioner imagines that a doctor could, or should, give a certificate when he is called in in this way.

I am, Sir, yours faithfully,

FREDERICK DIXON.

Surrey-street, Strand, W.C., June 24th, 1911.

THE ELECTION OF DR. J. A. MACDONALD AS A DIRECT REPRESENTATIVE.

To the Editor of THE LANCET.

SIR,—I wish to thank the medical practitioners of England and Wales for choosing me to be their Direct Representative on the General Medical Council at the recent election rendered necessary by the regretted death of Dr. McManus. Immediately after the result of the election was declared I was called upon to attend the session of the Council at which the National Insurance Bill was discussed, and the report upon certain of its medical aspects prepared, which drew from the Chancellor of the Exchequer the reply published in THE LANCET last week. The consideration of the Bill by the British Medical Association in the Representative meeting and the Special Committee has made such great inroads on time and energy that my friends will, I am sure, forgive the delay in returning my thanks; though tardily expressed, my gratitude is none the less sincere.

It shall always be my endeavour to justify the confidence my brother practitioners have shown by electing me to so responsible a position at this critical time.

I am, Sir, yours faithfully,

Taunton, June 26th, 1911. J. A. MACDONALD.

THE ADVERTISING OF PATENT MEDICINES.

To the Editor of THE LANCET.

SIR,—It may seem ungracious if, in thanking you for your kind notice of the motion I made in the recent General Assembly of the Church of Scotland regarding secret remedy advertisements in the monthly magazine of the Church, I venture to encroach upon your space. Will you allow me to correct a wrong impression which your paragraph in last week's issue is likely to leave upon your readers regarding the decision of the Supreme Court of our Church on the matter in question? The Assembly was practically unanimous in adopting a modification of my motion. The committee in charge of the magazine had referred in their report to objections urged against certain forms of advertisement, and had reported a marked loss of income due to their refusal to insert questionable notices. Desirous of making an end of a particular class of these advertisements, which still appear in the pages of the magazine, I moved as follows:—

> The General Assembly thank the Committee ..... for their care in regard to the selection of advertisements to be circulated in the magazine, and instruct them to carry their endeavours to that end yet further by excluding all advertisements of secret or patent remedies of a medical or quasi-medical description, in order that the disinterestedness and Christian character of the accredited organ of the Church may be above suspicion in that respect.

Although I am sorry to say that some voices were raised in defence of the *status quo* on financial grounds, by an overwhelming majority my motion, down to the words "*yet further*" was carried, the Assembly preferring to make its instruction more general than my proposal seemed to suggest, so as to include within its scope *other objectionable advertisements also*—e.g., of all sorts of *bogus bargains*.

Permit me to add that I value very highly your words of encouragement. I know you would not willingly do injustice either to the Church I represent or to the committee in charge of its magazine.

I am, Sir, yours faithfully,

June 23rd, 1911. WILLIAM A. CURTIS.

CHILDREN'S CONVALESCENT HOME, WESTON-SUPER-MARE.—The annual meeting of the subscribers of this institution, which is in connexion with the Royal Hospital for Children, Bristol, was recently held. The medical report stated that during 1910 the children admitted numbered 386. 359 patients had been discharged during the year, and of these 254 had "recovered," 79 had "much improved," 23 had "improved," and 3 showed no signs of improvement. The financial statement showed that subscriptions and donations had slightly diminished.

THE "CONGRESSO NAZIONALE D'IGIENE" AT TURIN.—This, the first of a series of Congresses to be held in future years at one or other of the great academic or industrial cities of Italy, will be inaugurated on Oct. 5th and will sit till the 8th of that month. The agenda paper is both interesting and opportune, prominent among the subjects to be dealt with being "Malaria," by Professor Negri of Pavia; "Industrial Hygiene," by Professor Bianchini of Bologna; "Disinfectants," by Professor Frassi of Parma; "The Hygiene of Schools," by Professor Bordoni-Uffreduzzi of Milan; "Mediterranean Fever," by Professor Neri; and articles of diet, such as "Sugar," by Professor Giacosa of Turin; "Milk," by Professor Volpino and Professor De Matteis of the same school; and "Drinking Water," by Professor Abba, Professor Volpino, and Professor Cler, also of Turin. Further information as to the Congress may be had on application to the President, Dr. Luigi Pagliani, professor of hygiene in the local university.

THE NATIONAL INSURANCE BILL:
POSITION IN IRELAND.

(FROM OUR OWN CORRESPONDENTS)

IRELAND has been well called the country of contradictory problems, where effect does not always obviously follow cause; in other words, the conditions that go to make what may be called the social organism are so complex that unless there is a thorough knowledge of the whole national and local circumstances it is absurd to attempt to connect cause and effect. This is being well illustrated at present by what is taking place in connexion with the Insurance Bill.

Meeting of Dublin Graduates.

A meeting of medical graduates of the University of Dublin was held at Trinity College on June 26th, when the Provost was in the chair, to consider the Insurance Bill as it would affect the medical profession in general and medical practice in Ireland in particular. Sir Charles Ball referred to the differences which exist between medical practice in Great Britain and that in Ireland; the Poor-law system, for instance, is quite distinct in the two countries. The seven points approved by the British Medical Association were considered in detail by the meeting. A resolution was passed condemning the medical clauses of the Insurance Bill as unnecessary and inapplicable to Ireland, and requesting the Chancellor of the Exchequer to cancel those clauses as far as Ireland is concerned, and to remodel the present system of Poor-law and hospital medical relief, so that it may apply to present conditions of labour and employment in Ireland. It was further resolved to appoint a committee to draft a statement for submission to Members of Parliament on the proposed resolutions. Among those who spoke were Dr. Henry Jellet, Dr. F. A. Winder, Mr. J. H. Campbell, M.P., and Dr. J. Esmond, M.P.

Action of the Roman Catholic Hierarchy.

At an important meeting of the Roman Catholic hierarchy held at Maynooth on June 20th a resolution was passed requesting the Chancellor of the Exchequer not to extend the Insurance Bill to Ireland, but to set aside the State contribution necessary for financing the scheme to the credit of Ireland, either for an insurance scheme to be specially devised for the needs of Ireland, or for some other purpose that may be deemed more beneficial to the general welfare of the population; and they call upon the Irish party to urge this policy in Parliament. They base their argument on the fact that while the Bill may do for England and Wales, of which 78 per cent. of the inhabitants are urban and only 22 per cent. rural, it does not suit a country like Ireland, of whose population only 28 per cent. are urban and 72 per cent. rural, and of whom only a mere fraction—either urban or rural—are wage earners, the immense majority being workers on their own account, such as farmers, shopkeepers, and others, who neither receive nor pay wages. Further, in their opinion the measure would increase unemployment. There can be little doubt, however, that among other things influencing the prelates is the well-known fact that the small farmers and their children who work on the land can always at present obtain gratuitous medical attendance and medicine through the widespread dispensary system, which has no parallel in either England or Scotland.

Views of the British Medical Association in Ireland.

The members of the South-Eastern Branch of the British Medical Association in Ireland, who met recently in Clonmel, have passed resolutions expressing satisfaction that the views expressed by the branch on the State Insurance scheme have been endorsed by the Roman Catholic bishops and by the General Council of the Irish County Councils. The resolutions also state that if the Bill "is forced on the country, seeing that it does not propose to fix the amount or condition of remuneration for medical attendance, but allows it to be settled afterwards between health committees, advisory committees, insurance companies, and medical men, similar powers of arrangement as to the admission or exclusion of voluntary classes and as to the terms on which they may obtain medical benefits under the Act in Ireland should be insisted on when the gross annual emoluments of such persons exceed £75 per annum; and that voluntary and all other contributors whose gross weekly earnings exceed £2 per week be excluded from the operation of the Act." They urge also that the part of Section 6, Clause 59, beginning with the words "and these officers," be deleted from the Bill, and call on the Parliamentary representatives of the south-eastern area to give effect to the views of the branch.

Proposed Amendments by the Irish Nationalist Party.

Some of the Irish Members of Parliament—especially those representing industrial towns—rather favour the Bill, having a natural reluctance to oppose a measure which is meant especially to assist the toilers. All Members of Parliament, however, in Ireland are probably agreed that the State contribution under the Bill must be obtained for Ireland. In these difficult circumstances, a committee of the Irish Nationalist Members, consisting of 14 of the ablest of their number, is sitting in Dublin working out a scheme specially devised to suit the country. This proposed addendum or amendment to Mr. Lloyd George's measure is still necessarily in a fluid state, but the details are common property in Dublin, where they are being criticised by the medical profession. It is understood that the Irish party will recommend for Ireland a much less extensive policy, with smaller contributions from both employer and employed, and that most of the work under such scheme, if it becomes law, will be given to the Poor-law medical officers. It is hoped that by some such offer as this the Poor-law officers may be detached from opposition, and may be willing to give their help to the working of the measure. In an interesting article in the *Scotsman* of June 24th it is pointed out that if Mr. Lloyd George accedes to what probably will be the Irish Nationalist demand, he will destroy the financial basis of his Bill, and he will at the same time make it more than ever objectionable to the Scottish agriculturist and farm-servant. It is also pointed out that even now Germany does not provide sickness insurance for the agricultural community.

The Irish College of Physicians Takes Action.

The Royal College of Physicians of Ireland has issued the following circular to its Members and Licentiates:—

Royal College of Physicians of Ireland,
6, Kildare-street, Dublin, June, 1911.

DEAR SIR,—The Royal College of Physicians of Ireland has had under careful consideration the terms of the National Insurance Bill now before Parliament. The College agrees with the following policy which has been extensively adopted by the profession:—

1. That the profession should be adequately represented on all boards and committees controlling or administering medical benefits.
2. That the Friendly Societies should not make the arrangements with medical practitioners for the attendance and treatment of insured persons, nor otherwise administer medical benefits.
3. That provision should be made for exclusion from medical and maternity benefits of persons whose average income from all sources exceeds £2 a week.
4. That adequate remuneration should be assured to medical men for their services.
5. That the patient should be allowed to select his own doctor from those available, but subject to the consent of the doctor selected.

The College does not ask for expressions of opinion on these points, but before taking such further active steps as may be deemed advisable in reference to the Bill, is desirous of obtaining information as to the effect which the scheme embodied in the Bill would have upon the income and standing of the Members and Licentiates of the College.

Replies are therefore invited to the following questions:—

1. What proportion of your patients would come under the compulsory insurance scheme of the Bill?
2. What percentage of your takings during the past two years has come from attendance on workers who would become insured?
3. Are any of your patients members of clubs, and if so, what proportion, if any, of your income do you suppose you would lose under this Bill?
4. What proportion of your gross receipts is spent upon drugs and dressings?

The College appeals to those Licentiates or Members whose practice will be especially affected by the Bill to answer the foregoing questions, addressing replies to the Registrar, Royal College of Physicians of Ireland, 6, Kildare-street, Dublin. All information will be regarded as absolutely confidential.

We are, dear Sir, yours faithfully,
(Signed) J. HAWTREY BENSON, M.D., President.
T. P. C. KIRKPATRICK, M.D., Registrar.

Summary.

On the whole, then, it must be said that the mass of opinion against the application of the Insurance Bill to Ireland is steadily increasing. Several county councils have declared the Bill in its present form unsuitable to Irish conditions, and have asked for a postponement for full consideration; the Roman Catholic hierarchy,—a body with great influence in the formation of public opinion in Ireland—has passed resolutions in similar strain; a meeting of graduates of Dublin University last

Monday passed a resolution condemning the clauses concerning medical and midwifery benefits in so far as they applied to Ireland; and the Irish Medical Association has circularised all medical men in Ireland, seeking their opinion on various suggested amendments, and asking whether members of the profession are prepared to refuse employment under the Bill if satisfactory changes are not made before it becomes law.

THE DISPOSAL OF REFUSE ON THE RIVIERA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

As most of the readers of THE LANCET know, the greater part of the Riviera consists of a narrow ledge of land with the sea in front and high mountains behind. Here are situated numerous winter stations, because the mountains shelter this narrow ledge from the cold winds and reflect the heat of the sun that faces them. For these reasons the Riviera has often been compared to a Dutch oven. It faces south. The sun plays the part of the fire, and people sit under the shelter of the mountains to bake themselves in its genial warmth.

Rapid Growth of New Towns.

This topographical situation confers on a comparatively northern latitude climatic advantages that, as a rule, can be found only much farther south. As usual in all human affairs there are, however, accompanying disadvantages. The most obvious is the want of room. When, with the exception of Nice and a few minor places, there were but fishing villages along the Riviera this did not matter. To-day the most pretty places are developing into large towns, such as Beaulieu, Turbie, Eze, and Cap d'Aile. A few years ago each of these villages consisted of a mere cluster of small cottages, now they have huge hotels, containing several hundred beds, and many exquisite villas surrounded by gardens where semi-tropical vegetation flourishes. The picturesque carriage road from Nice to Monaco, though 10 miles in length, has houses on either side nearly the whole way. Instead of little villages dotted along the road there will soon be a town stretching from Nice to Mentone some 16 miles long, and varying in width from 100 yards or so to half a mile. The little villages, which have now become quite important communes, with a town hall, a mayor and municipal council, will have to amalgamate and constitute the district councils or boroughs of a huge winter metropolis. Already these communes cannot exist without interfering with each other. Formerly the manure, dirt, and refuse of every household were consumed advantageously as manure, and placed at the roots of the neighbouring vines and olive trees. Now sewage schemes are being discussed, and it is discovered that if the main sewer of one commune should pass through the land of another commune the spot which would serve as a convenient sewer outfall for one sanitary authority must result in spoiling the beach and bathing of a neighbouring and rival district.

Mentone Refuse Thrown into Ravines.

Taking one of the many problems which the rapid growth of population renders more and more acute, there is the question of dealing with household refuse. At Mentone this difficulty has not yet been settled. Though Mentone is one of the older Riviera resorts and has now more than 10,000 inhabitants, the authorities have not yet decided what to do with the domestic refuse. At present it is taken away in carts along the beautiful and interesting road to Sospel and there thrown down into ravines. Nothing is done to prevent the horrible smell that arises when this rubbish begins to ferment; and, of course, it becomes a breeding ground for flies and mosquitoes. Everyone acknowledges that this is an absolutely reprehensible procedure, but as yet remedies have only been discussed. The upshot, however, of these debates is that the authorities have decided, I believe, on the erection of a destructor. But there are rival projects, and delay has arisen due to the difficulty of deciding which of them is the best. The first project consists of the Horsfall system as applied at Leeds and also, close at hand, at Monaco. It is proposed to build the destructor on the side of a hill so that a road passing behind might easily reach the higher level whence the rubbish is thrown on to the top of the furnace. The second project employs two furnaces at different temperatures. The air is to be carried through hot clinkers to help in the combustion of the material that is damp and has newly arrived. This is the Humboldt system, a firm that has its headquarters at Cologne. The third project is that of the British firm, Messrs. Heenhan and Froude, who are building a destructor at Havre and have their system at work at Burslem and many other places. Though it is doubtless embarrassing to decide which of these methods is best suited to the local necessities of Mentone, still the matter brooks no further delay.

The Monaco Refuse Destructor.

In this, as in many other respects, the Principality of Monaco was the first to set a good example. As far back as the year 1898, and at a cost of £3400, a destructor was built by the seashore in the Fontvieille district. The Horsfall system, which is very popular in England, was adopted. All the products of combustion that arise from the fire and the drying of the rubbish as it glides down towards the furnace, pass round and under, and then into the fire. These products of combustion are thus exposed to the highest temperature and rendered innocuous. To attain a very high temperature no cold air is allowed to reach the fire; it must first pass round the outside of the furnace and acquire some warmth. An occasional jet of steam discharged on the fire stimulates the air currents and adds to the temperature, which often exceeds 900° C. Outside, but close to, the furnace there is a chamber through which the hot air passes before it reaches the chimney stack. Here are placed carcasses, bad meat, &c., that have to be destroyed. The heat in this chamber is sufficient completely to destroy a horse's carcass during the course of the night. The clinkers that are the outcome of the destruction of the rubbish are very useful at the present moment. To increase the too small area of the Principality a sea wall is in course of construction just by the side of the destructor. The clinkers are thrown into the water between the sea wall and the shore, and thus land will be redeemed from the sea and the Principality enlarged. As some 70 cubic metres of rubbish can be destroyed in a day there is a pretty good yield of clinkers to constitute the foundations of the new territory. During all these years the destructor has worked well, and no complaints have been made.

Nice Refuse and the Fertilisation of the River Banks.

Nice is not so completely hedged in by mountains as some of the Riviera cities. Behind the town there is the broad valley of the Paillon, which is convenient for the disposal of rubbish, but the proceeding becomes very inconvenient when the wind comes from that quarter. The Paillon, and also the Var, which is not far off, are rivers with very arid pebble-strewn land on both sides. Indeed, the banks are of stone rather than land. So difficult is it to grow anything here that farmers come to Nice from great distances and gladly carry away the town rubbish at their own cost so as to bury it in their poor and unproductive soil. Though the population of Nice may continue increasing for many years to come, there is enough land on the banks of the Var and the Paillon to utilise for yet another 100 years all the household refuse and rubbish Nice can produce. Some of the worthless land on the banks of the Var belongs to the town. If the farmers do not fetch all the refuse away, the town can increase the value of its own property by rendering it fertile with its own rubbish. Higher up the Var and the Paillon there is much land available that could thus be rendered valuable. Here, then, is an admirable source of municipal revenue and a means of providing work for the unemployed if the public rights are jealously guarded. But there is the danger that as soon as the land has been rendered valuable at the public cost it will be jobbed away for the private profit of individual speculators. Unfortunately it does not seem as if the authorities at Nice recognise the necessity of holding remunerative property so as to meet the ever-increasing cost of local government. Yet it would be easier to collect rents from fertile lands, created by the municipality on the banks of the Paillon and the Var, than to incur the unpopularity of increasing the taxation which already weighs too heavily on the inhabitants of Nice.

Cannes Refuse Purified by Burial.

The municipality of Cannes possesses a good deal of land in the as yet uninhabited portion of an outlying district

called La Bocca. This is a good two miles away from the centre of the town, though there are many villas much nearer. Here, in a vast and flat field, the iron pipes to be used as water conduits were brought to be lined both outside and inside with cement. Now that this cementing of the pipes is concluded the big field is utilised for the disposal of the household refuse. The process consists of digging a trench, 5 feet wide and 2 feet deep, in summer. In winter, and for fear of the water, due to rain, the trenches dug are 3 feet deep. These trenches are filled with the refuse and the earth is placed back on the refuse. This is left to stand for five years. By that time a natural process of purification has taken place, the earth can be dug up and the ground used again. When I visited this place a trench had been dug at one end in virgin soil. This was a very heavy clay soil, and at the other end the soil was quite light and consisted of earth that had covered refuse for five years. There was no unpleasant smell whatsoever.

The important point to be observed is that the rubbish is buried just as it arrives. There is no sifting. This could not be done without exposing the refuse to the sun for at least 24 hours, and by that time it would begin to ferment and to smell. About 45 cubic metres of refuse are collected every day in four large four-wheeled carts and 17 two-wheeled tip-carts. Fifteen cubic metres of this refuse are sold for agricultural purposes, and in winter especially this is unloaded into railway trucks to be conveyed for the most part to Antibes. Here it is used to force plants, and more especially in hot-houses for early strawberries. It forms a sort of foundation or basis, which is covered over with choice earth in which the strawberries are planted. There then remain 30 cartloads which the town buries in the manner already described. The field at La Bocca is hardly big enough, it measures 1200 metres square. It is close to the celebrated umbrella pines which can be seen near the sea-shore as the train approaches Cannes. This land is worth 2*s.* the square metre, and belongs to a private owner, who allows it to be used for this purpose, and for such purposes it should continue to be used, for though five years' burial destroys bad odours, it does not follow that the land is fit to be built upon. But the municipality has at its disposal another field on higher land, which is preferable, especially when it rains. After the rubbish has been buried for five years it is sold at 60 centimes (or 6*d.*) the cubic metre. From the sanitary point of view this is excellent, but the agriculturist who digs this earth up five years later views the matter from a different standpoint. The golf club bought a quantity of this rubbish when it had been converted into what was supposed to be fertile earth; but sufficient account was not taken of the fact that the rubbish had not been sorted before it was buried. The remnants of an iron bedstead, a varied collection of shattered gallipots, a perforated saucepan, some old lamps, and much broken glass are not good substitutes for manure. The golf club found the soil at 6*d.* the cubic metre cheap, but the cost of the labour for sifting it was very dear. The municipality sometimes does the sifting, but then it sells the soil resulting at 8 francs the cubic metre. Even at this high price it only reckons to make a profit of 1 franc 50 centimes, or 1*s.* 3*d.*, per cubic metre. In these circumstances it prefers to sell the earth unsifted and get 6*d.* for it without any trouble at all. When sold at 8 francs the municipality has to dig it up, sift, and deliver it to the purchaser. If it is sold at 6*d.* the purchaser does all the digging and sifting himself and carts the earth away. However, these are minor considerations; the great fact remains that the sifting process is postponed until such time as it can no longer occasion a nuisance.

Mechanical Sorting and Crushing.

There can be no doubt that it may become a matter of necessity to employ household refuse, but the destructor renders very great service where space is restricted and there is a large accumulation of dwellings. This is notably the case at Monaco, as there is no room remaining in the Principality for agriculture. Liebig once urged that no country was sufficiently rich to be able, after the lapse of a certain time, to purchase back the fertilising principles of its existence which it had wasted. These words are significant to-day, as the tendency is to drain when possible into the sea, large rivers, or lakes, without making any attempt to utilise the sewage. It is becoming more necessary not to lose the fertile principles contained in house refuse. At the same time this must not become, as it used to be, a pretext for accumulating great heaps of putrescible matter. Fortunately there have been of late various inventions by which household refuse may be mechanically sorted and the utilisable portions ground into an inodorous powder. The difficulty will be to obtain from the sale of the fertiliser thus produced a sufficient revenue to pay the cost of elaborate machinery. It is said, however, that this can be done, as shown by important experiments made in the outskirts of Paris. But Paris is far away from the Riviera, though perhaps in time the Parisian example will travel southwards. Thus, in the end mechanical sorting and crushing will perhaps replace the methods described for dealing with domestic refuse.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

National Insurance Bill.

ON June 14th representatives of 26 Midland hospitals met to discuss the effect of the Bill upon hospital finance. Mr. Neville Chamberlain, senior representative of the General Hospital, which convened the meeting, presided, and representatives were present from the other Birmingham hospitals, West Bromwich, Wolverhampton, Walsall, Dudley, Stafford, the Potteries, Coventry, Warwick, Leamington, Stratford-on-Avon, Rugby, Kidderminster, Redditch, Cheltenham, Derby, Buxton, and Nottingham. Mr. Chamberlain remarked that a large part of their income was derived from the Hospital Saturday Fund and from the direct subscriptions of employers and workpeople. If they had to pay a compulsory sum weekly for insurance it seemed obvious they would not subscribe to the hospitals as in the past. Provision was made in the Bill for assistance towards the establishment of sanatoriums, but medical men did not seem to be at all unanimous nowadays in believing that these sanatoriums were going to be great curative institutions, and he submitted that it was a rash experiment to spend so large a sum on what was a doubtful matter and at the same time to withhold subscriptions from voluntary hospitals, about the value of whose work there was no doubt. Mr. Howard Collins (house governor to the General Hospital) gave the results of inquiries which he had made with reference to the finances of 40 hospitals within 50 miles of Birmingham. Thirty-two had supplied information. From the income of the hospitals he had taken out the total amount subscribed by employers from their places of business and the workpeople's contributions to the Hospital Saturday Fund as being affected directly, and the Hospital Sunday Fund and general donations as being only half affected. For the Birmingham hospitals the total income directly affected was £29,443. The estimated amount from employers and employees was £14,231; from the Hospital Saturday Fund, £7790; the Hospital Sunday Fund, £3278; general donations, £2236; and various other contributions, £4300. The total estimated amount affected was £34,478 out of a total income of £72,729, a percentage of 47·4. Taking the whole of the 32 hospitals it was estimated that £100,702 would be affected out of a total of £194,169. This was a percentage of 51·86. In the Birmingham hospitals the following figures applied: General, 32·6; Queen's, 79·7; Homœopathic, 43; and General Dispensary, 52·8. In the district the amounts varied as follows: Nottingham General, 65·3; North Staffordshire Infirmary, 67; Wolverhampton General, 68; West Bromwich, 95·8; Walsall, 76; and Nuneaton, 77·7. The variation was largely due to the proportion received from the Hospital Saturday Fund. The following resolution was carried unanimously:—

That this meeting, while welcoming any legislation which by reasonable arrangement will benefit the sick poor, is of opinion that the National Insurance Bill, if passed in its present form, will so gravely affect their income as to necessitate the curtailing of the amount and efficiency of their work, including a serious reduction in the number of beds they can support, and therefore urges that the Bill be so amended as to provide against such loss of income, whilst preserving their independence and maintaining an alternative to the Poor-law infirmaries.

—On June 15th a large meeting of the members of the

Birmingham branch of the British Medical Association was held in the Midland Institute and presided over by Professor J. T. J. Morrison. The meeting was undoubtedly the largest ever held by the profession in Birmingham, the branch drawing its members from a large area extending over portions of Worcestershire, Warwickshire, and Staffordshire. The Bill was discussed by Professor Jordan Lloyd, Professor H. Gilbert Barling, Dr. Langley Brown, Dr. Thomas Wilson, Dr. Harold Mason (Leamington), Dr. Radcliffe, Dr. Orton (Coventry), and several others. The resolutions formulated by the British Medical Association were unanimously passed, and the meeting pledged itself "to support this programme and to decline to serve on any terms that have not been accepted by the British Medical Association."

Hospital Saturday Fund.

The thirty-ninth annual collection was made on Saturday, June 17th, 1366 contributors paying into the Fund on the first day no less than £15,862, as compared with 1212 contributors and £14,265 last year. The total was £1002 better than the record year of 1908. It is hoped that before the Fund is closed at least £21,000 will be obtained. Sir Hallewell Rogers, the President, in addressing the workers, said that his view was that the National Insurance Bill would not affect the Hospital Saturday Fund to anything like the extent that might be feared on first thoughts. The objects of the Fund were, firstly, to support the Birmingham Hospitals and nursing societies with substantial annual grants, and to this end they divided among them £10,000 a year. There was nothing in the Bill to affect that situation. The hospitals would be as vitally necessary as ever. The Children's Hospital and Women's Hospital especially met the needs of patients who were not provided for by the Bill. Secondly, the objects of the Fund were to provide and support convalescent homes. There was nothing in the Bill that touched those homes. Up to date 40,000 patients had been treated free at their convalescent homes, and in their own right, without any rate aid, or State aid, or capitation grant from employers. Was it likely that the workpeople would stop such beneficent work? A large proportion of the Hospital Saturday Fund subscribers were already members of friendly societies and were already paying even more than 4*d.* a week. These would not have anything more to pay, and those who had been in societies for a large number of years would have less to pay than they do now for the particular benefits received. They therefore would not withdraw their Hospital Saturday penny. Then the Bill made no provision for the wives and children, both of whom formed a large proportion of the patients at the hospitals and also at the convalescent homes. Again, in the case of subscribers who were not at present members of friendly societies and would now have to start paying 4*d.* per week, they were no worse off than some thousands who in the past had annually joined the ranks of friendly societies without a thought of stopping their Hospital Saturday subscriptions.

June 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The University of Manchester.

IT is of interest to learn that the site and buildings of the University of Manchester represent £600,000. It must be remembered what Manchester has done for its University, for it has never had one halfpenny of public money as building grant. To keep pace with the ever-growing demands of the times, within the last ten years—1900 to 1910—the University has spent £212,461 on buildings. The total number of students attending the University is 1691, and of these 378 (including 21 women students) belong to the Faculty of Medicine. Certain minor changes have been made in the ordinances for the L.D.S., and the following new ordinances, *inter alia*, have been approved for the degree of Master of Dental Surgery:—

1. No candidate will be admitted to the degree of Master in Dental Surgery unless he has previously received the degree of Bachelor in Dental Surgery in the University.
2. Candidates, before proceeding to the degree of M.D.S., shall produce evidence of having, subsequently to the conferment on them of the degree of B.D.S., been engaged for at least one year in attendance on the practice of a dental hospital or in scientific work such as is conducted in the medical departments of the University, or alternately of their having been engaged for at least two years in practice as a dental surgeon.
3. Candidates may elect either (i.) to present an original dissertation or (ii.) to undergo an examination.

Singular Case under the Workmen's Compensation Act.

A somewhat unusual case under the Workmen's Compensation Act was tried in the Salford county court on May 19th, when a miner claimed compensation from a colliery firm for injuries sustained in an explosion due to shot-firing in one of their pits. A shot-firer named Pollitt was present as a third party at the instance of the employers. The claimant's case was that he was requested by Pollitt on Dec. 27th last to couple up a cable in connexion with the shot-firing in the mine. As he was in the act of responding there was an explosion which resulted in injuries incapacitating him from work. The defence was that the claimant, in obeying Pollitt's request, was contravening a statutory regulation made for the protection of the lives of miners. It was the duty of the shot-firer—a specially authorised person—alone to do the coupling, and if any other person did it a consequent accident could not be said to arise out of and in the course of his employment. The judge said that in his opinion the act of the claimant was one that might have resulted in danger to the lives of everybody in the mine, and under the circumstances was very serious indeed. As he was doing the work specially restricted to another person it could not be held that the accident arose out of and in the course of his own employment, and therefore there must be an award in favour of the employers. Owing to the gravity of the act, too, the employers would be allowed costs.

The British Psychological Society.

This society held its annual meeting in the Medical School, Manchester, on June 24th. There was a good attendance of members and visitors. Professor Sherrington was in the chair, and amongst the communications was one by the President on a method of demonstrating Listing's Law. The apparatus is ingenious and brings the facts clearly to the view of the onlooker. It requires the use of a dark room. Mr. Henry J. Watt read a rather abstruse paper on a New Classification of Experiences and the need for a theory which must be completely psychical. Mr. Cyril Burt discoursed on the Experimental Investigations of Emotional Dispositions and the need for investigation by the application of experimental methods, and by tests, both qualitative and quantitative, based on such processes as (1) apperception of ambiguous figures—e.g., a figure representing a skull and it maybe the figure of a woman, and determining which of the two appears first to the observer, which is prepotent; (2) memory for pictures; (3) preference for pictures; and (4) associative reactions. The sex question is obviously one of profound interest in this connexion. Dr. T. Graham Brown gave an account of the Perception of Movement of the Environment, such as the seeming movement of a cabin of a rolling vessel even when the head and eyes are fixed in relation to its walls. Dr. Brown expressed the opinion that the seeming movement of the wall of the cabin is not due to slight involuntary movements of the head and eyes, but seems rather to lie in the fact that sensations from the muscles of the eyes and from the labyrinths and proprioceptive organs of the muscles and joints of the neck all take part in the integration of the perception of movement of an object seen by the eyes. The seeming movements of a ship's cabin under the conditions specified may be explained as due to the determination of the perception of movement by the compounding of the sensation of the fixed retinal image and the sensations from the labyrinths which move in space with each roll of the ship.

The Meals of Necessitous School Children.

The Salford town council, at its last meeting in May, again discussed the question whether necessitous school children should have two meals a day supplied or only one. All the eloquence of the advocates of the two meals a day system, supported by quotations from Ruskin, Rowntree, Charles Booth, and other writers on social problems, failed to convince the council, and the proposal was once more defeated. It was successfully contended that already the council's education committee was doing as much as is necessary in this regard.

Infant Mortality in Salford.

The infant mortality in the borough of Salford for the

quarter ending April 1st was 118 per 1000 and the general death-rate 14·7 per 1000. Of the total deaths in the past quarter no fewer than 23·7 per cent., or nearly one-quarter of the whole, occurred in public institutions.

June 27th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Guild of Undergraduates.

AT a recent meeting of the Court of the University certain ordinances for the regulation of a Guild of Undergraduates were introduced and sanctioned by unanimous vote. The guild has as its objects "The promotion of corporate feeling and mutual fellowship among undergraduates and stndents, as well as of recreation in common and the cultivation of common intellectual interests." The Vice-Chancellor, in moving the adoption of the ordinances, said that they went no further than to constitute their guild a constituent body of the University, with a right to representation at the Court. They provide that every undergraduate shall, *ipso facto*, be a member of the guild, subscribing a sum not exceeding half a guinea annually. Provision is also made for the admission of associate members, the election of a representative to the University Court, financial administration, and the making of by-laws.

Chemists and the National Insurance Bill.

The chemists of Bristol and the surrounding towns met recently at the Grand Hotel to discuss the proposed insurance legislation. There was a very large attendance, and resolutions were passed approving of the separation of prescribing from dispensing, and asking that the dispensing should be entrusted only to persons registered under the Pharmacy Act, that patients should have freedom of choice of chemist, that payment should be fixed by scale and not on a capitation basis, and that pharmacists should have representation on the Central Advisory Board and on the Local Health Committee. It was further resolved that every dispensary employed under the Act should be subject to the Pharmacy Acts, the Food and Drugs Act, the Weights and Measures Acts, and all other Acts affecting traders; and that no further facilities be granted to carry on public dispensaries. All these resolutions were carried unanimously.

A Memorial Window at the Bristol Royal Infirmary.

A window, representing St. Elizabeth in robes of purple and grey, symbolical of royalty and humility, ministering to the sick and poor, has been placed in the chapel of the Bristol Royal Infirmary. Mr. Arnold Robinson of Bristol is the designer and the cost was defrayed by gifts from past and present nurses, members of the honorary staff and the committee. It is dedicated to the memory of eight nurses who have within recent years died while in the service of the infirmary. The ceremony of dedication was performed on Saturday, June 3rd, by Archdeacon Robeson.

Red Cross Society.

The Bristol branch of the Red Cross Society is now in possession of headquarters of its own in a central position. The various uses to which it is proposed to put all the rooms were explained to the officers of the various detachments by the county director, Mr. J. S. Griffiths, at a meeting held at the new headquarters. The work of the branch is progressing steadily, and it is hoped that eight or a dozen thoroughly served detachments may be formed with a few in reserve.

Compulsory Notification of Tuberculosis in Bristol.

At the last meeting of the Bristol health committee it was decided to report to the city council upon the importance of the compulsory notification of tuberculosis. It was also stated at the meeting that a lady would be prepared to give about £1000 towards the initiation of a dispensary for cases of tuberculosis. After some discussion the subject was left for further investigation.

Herbert Lorraine Earle Wilks, L.R.C.P. Lond., M.R.C.S. Eng.

Mr. H. L. E. Wilks, honorary surgeon to the Salisbury General Infirmary, died at his residence, The Retreat, De Vaux Place, Salisbury, on June 4th, in his forty-fourth year. The deceased received his medical education at Guy's Hospital, and qualified as M.R.C.S. and L.R.C.P. in 1891. Shortly afterwards he was appointed house surgeon to the Salisbury Infirmary. Mr. Wilks held this appointment for several years, and on his resigning the post was elected honorary surgeon to the institution. He was also surgeon to the Salisbury and South Wilts Provident Dispensary. Mr. Wilks had an extensive practice in Salisbury and the district, where he was very popular, and great regret is felt there at his early death.

The Health of Gloucestershire School Children.

At the last meeting of the Gloucestershire education committee it was reported that during 1910 over 13,000 school children had been medically examined, and only 43 per cent. of them were classified as being in a normal condition of health, although a large proportion of the ailments were of a minor character.

New Water-supply for Instow (Devon).

On June 12th the new water-supply for Instow was formally inaugurated in the presence of a large gathering. For some 20 years there have been various discussions at different meetings of the Barnstaple rural district council in reference to the water-supply of Instow, and eventually an arrangement was made with the Barnstaple Water Company to supply the little town. The water is carried from Barnstaple by 8½ miles of mains. Instow, which is one of the pleasantest of North Devon watering places, is to be congratulated upon at last obtaining an efficient and excellent water-supply.

The Treatment of School Children's Teeth at Torquay.

The Torquay education committee has obtained the sanction of the Board of Education to a scheme for providing temporary dental treatment for school children of the ages of 6, 7, and 8 years. Mr. J. Glanville Turle and Mr. Ludlow Strangways have been appointed to perform these duties until August 4th. These gentlemen will attend the children on two mornings every week for three hours on each occasion. The estimated cost of the undertaking is £40.

The Penzance Board of Guardians.

At a meeting of the Penzance board of guardians held on June 8th, Mr. C. Branwell, who was the only candidate for the post, was appointed medical officer for the fifth district. As already stated in THE LANCET, Mr. Branwell, owing to the insufficiency of the salary, resigned this appointment some months ago. The guardians then increased the remuneration, and appointed another medical man, but the Local Government Board refused to sanction the appointment. Mr. Branwell is to be congratulated upon securing his old post at a more adequate remuneration, and in being well supported by the local members of the profession.

June 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

National Insurance Bill.

AT the annual meeting of the Edinburgh branch of the British Medical Association, held in Peebles on June 24th, Dr. William Russell presiding, an informal discussion took place on the National Insurance Bill. The questions mainly discussed referred to the £2 wage limit, which by many of the members was regarded as too high. One country parish was particularly quoted in which with a population of over 300 souls there were not more than five persons with an income of over £150 per annum. Another point discussed was the question of mileage. One speaker, who had worked this question out in his own practice, stated that travelling by his own motor-car cost him 6*d.* per mile, and quoted the case of a patient whom he had seen a few days before 15 miles away, or 30 miles including the return journey. He charged this patient 15*s.* per visit, which allowed nothing for either his time or his skill, his contention being that on the question of mileage alone the Bill was unworkable financially.

Royal Faculty of Physicians and Surgeons of Glasgow and the State Insurance Bill.

At a largely attended extraordinary meeting of the Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow resolutions on the subject of the National Insurance Bill have been adopted, and the President, Dr. D. N. Knox, was requested to forward them to the Chancellor of the Exchequer for his earnest consideration. The resolutions were:—

1. That (*a*) the Insurance Commission, (*b*) the Advisory Committee, and (*c*) every Local Health Committee should include an adequate representation of duly qualified medical practitioners.
2. That "medical benefit" and "maternity benefit" should be administered by the Local Health Committees and not by "approved societies."
3. That in respect of the administration of "medical benefit" and "maternity benefit" the arrangements with "duly qualified medical practitioners made by the Local Health Committees should be such as to admit of free choice on the part of the insured person of the medical practitioner to be employed, and that the medical practitioner should have the right of refusal, such refusal being a matter of appeal to the Local Health Committee."
4. That in respect of the grant of subscriptions and donations to hospitals and other charitable institutions contemplated in Clause 17 of the Bill, the governing conditions should be assimilated to those set forth in Clause 15 (1) with regard to the administration of "sanatorium benefit."
5. That in respect of the provision to be made for "the supply of proper and sufficient drugs and medicines" under Clause 14 (2), the supply of proper surgical dressings and appliances should be included; and further, that steps should be taken to insure that the drugs and medicines are of the standard required by the British Pharmacopœia, and that the dispensing of prescriptions is carried out by qualified persons.
6. That "medical benefit" should include provisions for consultations and for operations when these are necessary; further, that the Local Health Committees be empowered to determine the remuneration of duly registered medical practitioners for special services rendered.
7. That in the case of an insured woman it should be made clear that "sickness benefit" accrues in addition to "maternity benefit"; and further, that in cases attended by a midwife the local health committee be empowered to pay for the attendance of a medical practitioner should such attendance be called for by the midwife, in accordance with the rules governing her practice.
8. That in respect of the deposit contributor class, which will consist of members other than the picked lives of the Friendly Societies, increased remuneration should be paid to medical practitioners.
9. That provision should be made in the Bill for exclusion from medical and maternity benefits of persons whose average income from all sources exceeds £2 per week.

Aberdeen Medical Men and National Insurance.

Under the auspices of the Aberdeen branch of the British Medical Association a mass meeting of the members of the medical profession within the area of the branch—Aberdeen, Banff, Kincardine, Orkney, and Shetland was held in the Medico-Chirurgical Society's Hall on June 15th for the purpose of considering resolutions and amendments anent the National Insurance Bill. There was a large attendance. The President, Dr. John Gordon, spoke of the medical aspect of the Bill, and referred to its effect upon the profession. He noted the fact that children under the age of 16—in the present form of the Bill—would not participate in money benefit, but would participate in medical benefit. He also drew attention to the fact that the Bill contained no provision for the statutory representation of the medical profession on any of the three administrative bodies, appointed under the Bill—the Insurance Commission, the Advisory Committee, and the Local Health Committee. Dr. D. Lawson, Nordrach-on-Dee Sanatorium, who represented the branch at the meeting held in London last month, reported shortly of the interview which the meeting had with Mr. Lloyd George, and showed how unsatisfactory, from the point of view of the profession, the meeting was. A lengthy discussion ensued, the Bill being strongly criticised in many cases. Finally, the resolutions contained in the circular of the British Medical Association of June 3rd were put to the meeting and unanimously carried. At a meeting of the Aberdeen Medico-Chirurgical Society held on June 14th the same resolution was carried unanimously.

Montrose Asylum: Annual Meeting.

The annual meeting of Montrose Asylum was held on June 13th. The usual grant of £325 was made to the Royal Infirmary. Dr. W. Leggett, chief assistant at Sunnyside, was granted an increase in his salary from £200 to £250 per annum. Dr. M. A. Milne was appointed X ray operator and chloroformist at the infirmary, and Dr. M. Connon, Dr. J. A. S. Grant, and Dr. H. J. Hoile were appointed medical officers.

The late Dr. MacKenzie, Kingussie.

The funeral of the late Dr. MacKenzie, Kingussie, took place on June 14th at Kingussie churchyard, amidst manifestations of deep sorrow on the part of the townspeople and the general public. There was a large attendance of mourners, and shops and all places of business were closed during the funeral. The schools were closed from midday, and a number of the advanced pupils, in whose welfare the deceased had taken a warm interest, attended. At the monthly meeting of the town council it was unanimously agreed to that a minute of condolence be inserted in the burgh records, and an excerpt ordered to be sent to the late Dr. MacKenzie's family.

Morningfield Hospital, Aberdeen.

The annual general meeting of the managers and subscribers was held on June 13th. The balance sheet showed a total income of £1965 5*s.* 2*d.*, and an expenditure of £2321 16*s.* 9*d.*, and an extra expenditure of £44 18*s.* for repairs. A special grant of £150 was transferred to the reserve account. The average number of patients in the hospital throughout the year was 79. The committee regretted to report a deficiency of £356 11*s.* 7*d.* on the year's accounts, the more so as the deficiencies on the last seven years had amounted to £1532, and further, that except for legacies the deficiency would have been much greater. The average cost of each patient for last year was £25 6*s.* 7*d.* The ordinary income was sufficient to maintain only 50 patients. The report was approved.

Dundee Royal Infirmary: Annual Meeting.

The annual meeting of the Dundee Royal Infirmary was held on June 12th. Income amounted to £13,372 17*s.* 1*d.*, an increase of £82 over last year. The principal item of increase was in collections from mills, factories, and works, which exceeded last year by £267. The greater part of that amount arose from Mr. J. K. Caird having contributed sums equal in amount to the collections of his workers at Ashton works and Craigie works for the years 1909–10 and 1910–11, the former having been received too late for inclusion in last year's accounts. The ordinary expenditure amounted to £16,445 17*s.* 3*d.*, an increase of £385 17*s.* 6*d.* over last year. The extraordinary expenditure amounted to £1653 2*s.* 4*d.*, leaving a total deficit of £4726 2*s.* 6*d.* The chairman said the directors had agreed to the continuation for another year of their agreement with the directors of the Royal Asylum relating to the admission and treatment of certain nervous disorders. The Sidlaw Sanatorium had at present 13 adult patients and 28 children. The new out-patient department of the infirmary, to which Mr. Caird contributed a gift of £2400, was opened last month, and was found convenient for the work. The number of in-patients treated in the infirmary during the year was 4098, as against 4038 during the previous year. In the maternity department there had been 370 in-patients, an increase of 50 over the previous year. There were 20,230 out-patients as against last year's 19,516. Altogether there were 31,921 cases treated as against 32,340. The average cost per bed occupied was £55 2*s.* 1*d.*, which was a reduction of 13*s.* 8*d.* per bed over the previous year. Dealing with the Insurance Bill, the chairman said that apprehensions had been felt all over the country that the Bill, if passed into law in its present form, might strike a serious blow at the finances of their hospitals, which were largely maintained by voluntary subscriptions, inasmuch as employers and employed would alike be unwilling to continue their voluntary subscriptions when they were separately for the same purpose taxed by the law of the land. After reference to what has been done in the matter by the General Hospitals Association, he moved the adoption of the report, which was unanimously agreed to.

The Population of Aberdeen.

At a committee of the Aberdeen town council meeting on June 14th Professor Matthew Hay, medical officer of health, pointed out that the population of the city had increased 8 per cent., as compared with Glasgow 9 per cent., Edinburgh 4 per cent., and Dundee 2 per cent. If the population of Oldmill Poorhouse and Kingseat Asylum had been included in the population, the Census figures for the city would have been 165,184, as against Dundee 165,006.

Aberdeen University Anthropological Society.

A meeting of the Aberdeen University Anthropological

Society was held in the Anatomy Theatre, Marischal College, on June 16th, when a very interesting lecture was given by the Rev. F. G. Bowie on the inhabitants of the New Hebrides, where he has laboured for 15 years. Mr. Bowie described the various superstitious customs peculiar to the inhabitants, dealing particularly with their method of the treatment of disease, the problem of caste, and the relations existing between the inhabitants of various villages. The lecture was illustrated by a series of photographs and by numerous specimens.

June 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Visit of the King and Queen.

Two items in the programme of the forthcoming visit of Their Majesties to Ireland are of medical interest. Her Majesty the Queen has consented to visit the Coombe Lying-in Hospital and declare open the new dispensary buildings. The Collier Dispensary for the Prevention of Tuberculosis is to be opened by His Majesty the King with the Queen. Dr. J. T. Crowe, who has been medical superintendent of the Royal National Hospital for Consumption at Newcastle for some years, is to be medical officer of the dispensary, with Dr. Daniel as assistant, and Mr. W. Lombard Murphy as throat surgeon.

Meeting of the Irish Medical Association.

The annual meeting of the Irish Medical Association was held recently in Cork. The report showed that there were 425 paying members for 1910. During the year the Association, in conjunction with the Irish Committee of the British Medical Association, had taken steps to press forward the scheme for a National Medical Service. The main lines of the scheme approved are those of the Vice-Regal Commissioners' Report, with certain amendments. The main business at the meeting was, however, the discussion of the National Insurance Bill. The Association approved of the conference of delegates held on June 9th,[1] and appointed a committee, consisting of the President, Dr. Jeremiah Cotter, of Cork; the honorary secretary, Dr. A. G. Robb, of Belfast; Mr. G. U. Macnamara, of Corofin; and Dr. L. Kidd, to wait on Mr. Lloyd George and the Irish Members of Parliament. It is reported that the Chancellor of the Exchequer has left the whole matter of dealing with Irish medical men to the Irish Party, and that they are at present busily engaged in drafting a Bill, the main line being that the compulsory part is to be given over to the dispensary medical officers and the voluntary portion to be dropped. So far the party drafting this measure have not received any medical deputation. It will be interesting to see what sort of constructive Bill the hitherto most destructive critics in the House of Commons will produce. Subsequently a referendum of the whole profession in Ireland is to be procured and steps taken for the holding of a mass meeting in Dublin, at which, with the assistance of the increased information so obtained, all the medical practitioners of Ireland will have an opportunity of deciding what definite action should be adopted in what is regarded as a very grave crisis for the profession. The annual meeting was one of the largest held for many years, due, doubtless in great measure, to the interest taken in the Insurance Bill. The social functions organised by the local executive committee were a complete success. The President of the Association and Mrs. Cotter gave a luncheon to the members on the first day at St. Antony's Hall, and Professor B. C. A. Windle, President of University College, and Mrs. Windle provided afternoon tea. A large gathering attended the annual banquet at the Imperial Hotel the same night. Amongst the official guests present were the Lord Mayor of Cork, the Recorder of Cork, the City High Sheriff, and Mr. Maurice Healy, one of the Members of Parliament for the city. Whilst the medical men and their guests were dining, Mrs. Cotter provided a musical entertainment for the ladies in another part of the hotel. The following day the s.s. *America*, chartered by the local committee, conveyed a large number of the members and their ladies down the river to several of the beauty spots in the harbour, an excellent luncheon being provided. That night the Lord Mayor and Lady Mayoress held a conversazione in the City Hall. The following day the City High Sheriff, Mr. Richard Beamish, and Mrs. Beamish gave a garden party, which was largely attended. The beautiful grounds were admirably suited for this very enjoyable entertainment, which proved a fitting *finale* to what on all hands was regarded as a most successful meeting.

[1] See THE LANCET, June 17th, p. 1677.

The Royal Hospital for Incurables, Dublin.

There is warm discussion over the proposal of the Royal Hospital for Incurables to increase its accommodation for tuberculous patients. At present there are only 40 beds for such cases, and it is intended to increase the number to 100 by the erection of a new pavilion in the hospital grounds. The hospital is situated in the suburbs of Dublin in some 15 acres of ground. Outside the unions, and a few beds in the Hospital for the Dying and in the Rest for the Dying, the hospital affords the only shelter in Dublin to persons incurably ill of tuberculosis. Unfortunately, the property owners and householders in the neighbourhood of the hospital have become alarmed at the danger of infection, and threaten legal proceedings to prevent the governors of the hospital carrying out their plans. This opposition would hardly have been taken seriously had not the Royal College of Physicians introduced, and passed, a resolution condemning the proposal of the hospital, not merely on the ground of the danger to the health of the district, but also because it "would be against the best interests of the unfortunate subjects who would be admitted." This resolution has naturally come in for severe criticism, as the only alternative for unfortunate persons suffering from tuberculosis is to die in their homes, where they are an infinitely greater danger to the public health than they would be in a properly conducted institution.

Royal Institute of Public Health.

Lord and Lady Aberdeen will attend the opening of the Congress, when the Lord Lieutenant, as patron, will instal Lord Dunleath as President. In addition to the various papers which will be read the following important subjects have been arranged for discussion in the different sections and conferences at the congress to be held in Dublin in August:—

Section A.—Preventive Medicine:—Subjects to be discussed: (1) Vaccination; (2) Aerial Convection of Diseases; (3) Effects of the Insurance Bill on Public Health.

Section B.—Chemistry and Bacteriology:—Subject to be discussed: (1) Typhoid carriers.

Section C.—Child Study and Eugenics:—Subjects to be discussed: (1) Open-air Schools; (2) Sanitary Condition of Schools in Ireland; (3) Medical Inspection of Schools.

Section D.—Comparative Pathology and Veterinary Hygiene:—Subject to be discussed: (1) Diseases Transmissible from Animals to Man.

Section E.—Engineering and Architecture:—Subjects to be discussed: (1) Tar-bound Macadam; (2) Disposal of House and Trade Refuse; (3) Treatment of Sewage, Effluent and Sludge Deposit.

Section F.—Housing of the Working Classes, Town-Planning, &c.:—Subjects to be discussed: (1) Discussion on the Operation of the Housing of the Working Classes Act and the Labourers Dwelling Act in Ireland; (2) Discussion on the Problem of Providing Dwellings for Workers in Dublin; (3) Principles of Town-Planning.

Section G.—Municipal and Parliamentary:—Subjects to be discussed: (1) The Limitation of Non-notifiable Infectious Diseases: (2) The Day Industrial Schools.

Section H.—Vital Statistics:—Subject to be discussed: (1) The Vital Statistics in Dublin. (Paper by Sir C. A. Cameron, C.B.)

Conference of Medical Officers of Health and Port Sanitary Authorities:—Subject to be discussed: (1) The Administration of the Public Health Act in Ireland as it affects Medical Officers of Health in Ireland.

Conference of Sanitary Inspectors:—Subject to be discussed: (1) Necessary Amendment to the Public Health Acts.

The Death of Sir George P. O'Farrell.

General regret is expressed at the death of Sir George Plunkett O'Farrell who recently retired from the post of Inspector of Lunatics in Ireland.

Expenditure on the Belfast District Asylum.

At a conference held recently in Belfast in connexion with the Charity Organisation Society, in which the work of the Belfast Branch of the Women's National Health Association of Ireland was brought forward in reference to tuberculosis, hygiene of schools, and infantile mortality, Professor J. A. Lindsay referred to the state of the primary school buildings, and said that in Belfast they devoted more attention to the sanitary condition of dairies, cowsheds, and even piggeries than they did to the sanitary condition of their primary schools. He sometimes thought that if he received a

visit from an inhabitant of another planet he would first take him to their magnificent asylum at Purdysburn and then to some of their primary schools. He thought his visitor would ask with amazement how they came to lodge their lunatics in palaces and to teach their children very often in hovels. There can be no doubt but that Professor Lindsay only expressed what is in everybody's mind who has a knowledge of public health, that it is time to call a halt to the tremendous expenditure of money in the magnificent villas at Purdysburn Asylum, where the results are, after all, naturally so poor, and to spend more of the public money in improving the hygiene of the schools and in trying to lower the high infantile mortality of Belfast, which was actually 143 per 1000 in 1910, while in London it did not exceed 103.

Royal Victoria Hospital, Belfast.

Dr. Thomas Houston has been appointed assistant physician in charge of the hæmatology and vaccine-therapy department, and Dr. J. C. Rankin, assistant physician for the X ray department. Dr. V. G. L. Fielden has been appointed anæsthetist, his position ranking with that of assistant physician or surgeon.—Hospital Saturday has realised already £925, and when completed it is expected that the sum will amount to £1000.—After paying expenses, £403 4*s.* were realised by allowing people to view the great ship in Belfast —the *Olympic*, and the sum was divided as follows: Royal Victoria Hospital, £151 12*s.*; the Mater Infirmorum Hospital, £75 16*s.*; the Queen-street Children's Hospital, £75 16*s.*; and the Ulster Hospital for Women and Children, £100.

Ulster Medical Society.

Dr. H. L. McKisack has been elected President; Dr. J. C. Rankin, secretary; Dr. John Rusk, treasurer; and Dr. W. L. Storey, librarian, for the session 1911–12.

Prevalence of Diphtheria in Belfast.

Diphtheria has practically been epidemic in Belfast for fully a year. During the past fortnight a local outbreak has occurred in the neighbourhood of Fortwilliam Park, one of the best residential quarters of the city. Sixteen cases have been sent to hospital.

The Antrim Infirmary.

At the last monthly meeting of this institution a resolution was unanimously adopted:—

That this meeting having considered the National Insurance Bill, now before the House of Commons, is of opinion that provision should be made in the Bill for payment to be made to the hospitals in respect of all insured persons receiving treatment, whether as in- or out-patients.

June 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Assassination of the Head Surgeon at the Hôtel Dieu.

Dr. Guinard, surgeon of the Hôtel Dieu at Paris, has been assassinated in the court of his hospital by one of his former patients, a Spanish journeyman tailor named Herrero, who fired five times upon him with a revolver. Dr. Guinard was carried immediately to the operating theatre and underwent the operation of laparotomy at the hands of his colleagues. One bullet was found to have penetrated the right kidney and perforated the intestine in eight places. Another had wounded the urethra and the prostate. After a long agony of eight days, during which his mind remained clear and consciousness was complete, the end came. As Dr. Guinard's death happened not only in the exercise of his office, but by reason of his office, the funeral was given by the municipality of Paris. The ceremony took place in the cathedral of Notre Dame, which became the scene of an imposing medical demonstration. A monument to Dr. Guinard will eventually be erected in the Hôtel Dieu. Among the funeral orations that of Dr. Segond produced a great impression. He spoke as the representative of the Société de Chirurgie, and did not hesitate to lay the responsibility for the crime on the mental attitude assumed by the public, from whose point of view the surgeon is a man who makes enormous sums of money and has only one aim—that of performing the largest possible number of operations. On the day of the death a political journal made the statement that the hospital surgeon does not take sufficient precautions with the poor people whom chance brings under his notice in his service, adding that the patients, though theoretically free to refuse a proposed operation, find themselves practically obliged to accept it, since in the case of refusal the only alternative is immediate dismissal. Under these conditions it is comprehensible, thinks the lay journal, that if the operation renders the subject infirm and unable to earn his livelihood, rage and a desire for revenge should spring up in the minds of neurotic subjects prone to melancholia and ideas of persecution. The circumstances which impelled the assassin to the commission of the crime are the subject of much comment at present among both the public and the medical profession. Before the magistrate who interrogated him the assassin declares that he had revenged himself on Dr. Guinard, who had maimed him for the rest of his life. Two years previously he had consulted Dr. Guinard for a fistula which had followed a large ischio-rectal abscess. Dr. Guinard laid open the fistula with the thermo-cautery. The patient was forewarned that temporary incontinence of the sphincter ani would be the consequence. As a matter of fact the incontinence did ensue, but did not prove temporary. The patient returned from time to time to complain to Dr. Guinard and consulted surgeons in other Paris hospitals. He asserts that Dr. Guinard put him off with irony and accused him of unmentionable habits. He declares also that in one of the hospitals which he visited an assistant assured him that his condition was caused entirely by a badly executed operation. The medical journals comment freely on these statements, of which the first is highly inconsistent with the gentle and kindly nature of Dr. Guinard, and the second, if exact, gives an added proof of the danger of imprudent explanations offered to patients by young and presumptuous students too ready to fail in respect to their former chiefs. Another incitement to such criminal acts is to be found in the idea that exists not unnaturally in the mind of the public (as a consequence of the new social laws which give a right to indemnity for whatever accident may occur) that for every misadventure which may happen to them some person or persons are necessarily responsible. It will soon be the case that if a person fractures his leg through slipping on a piece of orange-peel in the street he will sue the head of the street cleaning department. The magistrates who have awarded damages to patients on the ground that their medical attendant had failed to cure them have prepared the way for the criminal outrage of which an excellent surgeon has been the victim, a man whose great kindness and high character seemed to place him, even more than most, above such shafts of fortune. Dr. Guinard was the author of notable works on surgery of the abdomen and of the thorax and on cancer.

Disease and Mortality in the Army.

In the course of the discussion before the Senate on the War Budget, M. Richard Waddington remarked that disease among the soldiers was on the increase, a disconcerting statement in view of the continually increasing sacrifices offered in propitiation of the goddess Hygeia. It is true that in the last ten years mortality in the French army has been regularly diminishing. But its sum (4·26 per 1000) is still higher than that of Prussia (1·31), Hungary (2·82), and Italy (3·28). With regard to the morbidity returns, calculating from the number of soldiers entering the military hospital, it was in 1902 600 per 1000. At the present time it has reached 740 per 1000. The discussion which took place before the Senate on this subject shed a light on the many differing causes of this increase in the hospital admissions. There is, first, the dictates of humanity, whereby the rule for French soldiers is becoming more and more gentle through the growing influence on Parliament of sentiments of compassion for the humbler classes. Military doctors, exposed to attacks in the newspapers and complaints made in Parliament by the deputies of the Opposition, now much oftener than formerly admit soldiers desirous of entering the hospital for rest. A more serious reason is one to which attention has been directed by several senators; the diminution in the birth-rate in France, by limiting the choice of possible recruits for the army while the same numerical strength is to be maintained, renders it necessary to accept men of inferior physique, who in former days would have been rejected and who eventually constitute a large percentage of the hospital admissions. For an almost

identical total of men "*les conseils de révision*" in France have only 350,000 men to examine, while in Germany there are 1,200,000 to choose from, so that France has to enlist 70 per cent. of its contingent, Germany only 30 per cent., which gives that Power the chance of accepting only the robust. Lastly must be added the law which fixes the period of military service at two years instead of three years; a soldier's instruction compressed into two years instead of three becomes much more fatiguing and is more likely to produce exhaustion and illness. The report ends with a declaration which confirms the views expressed a long time ago by M. Delorme, inspector-general, to the effect that the morbidity of soldiers in a garrison town is influenced by the morbidity of the civil population of the town, with whom the soldiers are in frequent contact in restaurants, cafés, theatres, and hotels, while attempts to improve the state of the barracks and to supply pure water are almost nugatory if the town is unhealthy and the soldiers drink contaminated water in the cafés. The conclusion is that permission to quarter troops in towns where hygienic precautions are not taken must be absolutely refused. But such a measure will be extremely difficult to enforce, for the destination of regiments, which are a source of prosperity to the town shopkeepers, is generally dictated by political reasons.

June 26th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Sea Air in the Treatment of Pertussis.

AT a recent meeting of the Budapest Royal Society of Medicine Dr. Szegö read a paper on Sea Air in the Treatment of Pertussis. He said that although there was still some diversity of opinion as to the specific cause of this disease, it was generally considered to be of an infectious nature, and accordingly in its treatment recourse should be had to the measures advised in virulent and contagious diseases as a class; the principal points to be observed being isolation of the patients, free ventilation and disinfection of their apartments, and sterilisation of clothing and other articles used by them. As to microbicide remedies, few of these were of any real service in pertussis, and those which have done such excellent service in surgical practice were not available in constitutional diseases. Inhalations of ozone have proved of much benefit in the hospital treatment of pertussis by Dr. Schiff, who attributed the favourable influence of this procedure to the antispasmodic properties of ozone. Dr. Szegö, however, believed ozone to be antiseptic as well and a true germicide in broncho-pulmonary affections. Sea air was known to be rich in ozone, an atmospheric condition which, in his opinion, accounted for the benefit derived from a sojourn at the seaside in the treatment of pertussis.

Chloride of Ethyl as a General Anæsthetic.

Dr. Manninger has published in the May number of the *Orvosok Lapja* an article recommending chloride of ethyl as a general anæsthetic in certain cases. He has found that this substance, which is also known as kelene, produces anæsthesia easily and rapidly, and is, moreover, free from the discomforts and dangers of chloroform and ether. It is procurable in tubes of known capacity containing from 25 to 50 cubic centimetres, a method permitting an exact knowledge of the amount used, which should not, as a rule, exceed 25 cubic centimetres (about six-sevenths of a fluid ounce). It may be given on a compress, usually in quantities of 5 cubic centimetres at a time (2 to 3 cubic centimetres for children and 6 to 10 cubic centimetres for alcoholic patients), and this dose may be repeated at intervals of five minutes during the operation, to the limit of 25 cubic centimetres. It will thus be seen that this anæsthetic is best adapted for short operations, though it may be advantageously employed in longer operations as a preliminary to chloroform or ether. By this means the discomforts and the dangers incidental to the inhalation of chloroform and ether are avoided, and a smaller quantity of the latter drugs may be used. Analgesia is produced by one or two inhalations of kelene, provided that these are sufficiently deep and that atmospheric air has not been directly inhaled; complete anæsthesia, which generally ensues in three minutes, is indicated by muscular relaxation and sometimes by dilatation of the pupils and by abolition of the corneal reflex. Anæsthesia continues for three minutes after inhalation of 5 cubic centimetres of kelene, when the dose must be repeated if the anæsthesia is to be prolonged, but complete analgesia persists for from 15 to 20 minutes after withdrawal of the drug, the patient regaining consciousness but suffering no pain during the completion of the operation, should it be deemed expedient to continue the work in this condition. Not the least of the advantages claimed for kelene anæsthesia is the absence of excitement in ordinary cases, though a slight excitement—not in the least comparable to that produced by other anæsthetics—is seen in hysterical and alcoholic subjects and when there has been direct inhalation of atmospheric air. Both the pulse and the respiration are normal in kelene anæsthesia. As a rule, there is no vomiting when the patient regains consciousness and no ill-effects are felt. An objection to kelene as a general anæsthetic is that it occasionally fails to produce the complete muscular relaxation essential to the performance of certain operations, such as reduction of dislocations, in which event the operator must hold himself in readiness to continue the work with another anæsthetic. The rapidity with which the patient recovers from the anæsthesia necessitates repeated doses during the operation, and as the amount given should not exceed 25 cubic centimetres kelene is unsuitable as the sole anæsthetic for use during long operations. Dr. Manninger, however, considers that at the commencement of long operations it is useful as a preliminary to the administration of chloroform or ether.

June 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"*Father Tiber Salutes Father Thames.*"

THE coronation of King George V. and Queen Mary, at which the whole world, far and near, has assisted, found no nationality more cordially interested than Italy, sincere as she has ever been in her admiration of British institutions, profiting as she has not failed to do by British precedent, and grateful as she will always remain for British participation in her "Risorgimento," promoted as that was by British sympathy as effective as it was unselfish, and by British support as unobtrusive as it was opportune. In all her great centres of population she was worthily represented at the symposia held on June 22nd by the English-speaking colony, joining enthusiastically in the "toast of the evening" and supplementing the official oratory by eloquent contributions of her own. At more than one of these the reciprocal indebtedness of the two peoples in the domain of science was pointedly referred to—British medicine, for instance, in its later development repaying what it owed to Italian in the post-Renaissance Universities of Padua, Bologna, and Pisa. The first-named of these schools has no prouder boast than that of having inspired the English William Harvey; and if her consummate anatomist and teacher, Giulio Casserio, earned the gratitude of relays of students from every European nationality, that gratitude found no finer expression than in the epigrams of the Scottish Arthur Johnston, body physician to King Charles I., to whom the famous "Anatomica Sectio à Julio Casserio Patavii Exhibita" owes an immortality only to cease with the Latin tongue.

Dr. Augusto Murri.

In this connexion it is opportune to mention that the illustrious head of the clinical staff of the Bologna school, Professor Augusto Murri, known to readers of THE LANCET more particularly for his contributions on the pathology of the brain, has not suffered seriously from the terrible railway accident which on June 20th caused three deaths out of the 33 passengers who were more or less injured. The scene of the disaster was San Benedetto del Tronto, a station on the Adriatic seaboard, some 30 miles south of Ancona, and Professor Murri was in the train *en route* to Teramo, to which he had been summoned in consultation. Providentially he was in a first-class compartment which

seems to have suffered but partially from the collision, and beyond a superficial lesion and the inevitable "shock" he was so little the worse as to be able to despatch a reassuring telegram to his wife and to give some assistance to his less fortunate fellow passengers. The latest accounts from Bologna represent his condition as "satisfactory," though his years (more than three score and ten), added to domestic trials fresh in the mind of the public, still warrant anxiety on the part of his many friends and pupils.

St. Andrews University and the Vatican.

Scotland's "Mater Studiorum," which is to celebrate her 500th birthday next September, is another British institution in which Italians are interested, if only for the fact that, like Glasgow and Aberdeen, it started under the ægis of the Holy See, which will be officially represented at the celebration in question. The current number of the *Vox Urbis*, a monthly periodical in the Latin language, published with the approval of the Vatican, contains an article, "De Urbe Sancti Andreae ejusque Studiorum Universitate," which will gratify the many graduates, medical and other, of that seat of learning, for its accurate historical details and its glowing eulogy of the town and its school. Four effective illustrations representing the ruined cathedral, the remains of the castle, and the United Colleges of SS. Salvator and Leonard and of S. Mary, supplement the letterpress, which, while highly creditable to the scholarly priest who contributes it, does little more than indicate the "Royal and ancient game" of which St. Andrews used to be called the Mecca. Even the flowing and flexible Latinity of S. Jerome may be excused for not venturing beyond an allusion to the "pera clavicularum" (golf-bag). The writer, however, might have found a more classical equivalent for "Dundaeum" in alluding to the College of Dundee. "Taodunense" (derived from the "dun" or hill on the Taus or Tay) would have had the sanction at least of George Buchanan and also of that distinguished physician and Latin poet, Dr. Archibald Pitcairne.

June 24th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Census in South Africa.

THE Census in South Africa was taken on May 7th. It is to be regretted that it was not taken on the same day as in the other overseas dominions and in the mother country. The explanation officially given is that owing to the inauguration of Union the Government was unable to make the necessary arrangements for it to be taken earlier, although it is understood that much of the preliminary work had been done prior to Union. The Census was taken under the directorship of Mr. J. B. Moffat, Commissioner of Taxes for the late Cape Colony. The post was originally offered to Dr. A. J. Gregory, the medical officer of health for the late Cape Colony, immediately after Union, but was declined by that officer in the absence of some assurance from the Government as to his official future in public health under Union. From a statistical standpoint it is unfortunate that Dr. Gregory was unable to see his way to accept the appointment, for his prolonged experience in such work and his special statistical attainments clearly marked him out as the one man in South Africa especially fitted for it. From a public health standpoint, however, the profession and the public are thankful that Dr. Gregory did not take up the directorship of the Census, for had he done so he would have been shelved from public health work, and it is generally recognised that at the present critical juncture in the history of public health administration in South Africa he could not well be spared. Dr. G. Pratt Yule, the medical officer of health for the late Orange River Colony, acted as supervisor of the Census for his province, but now that the actual Census is taken it is understood he will not be required to assist further. Indeed, as far as is known, Mr. Moffat is not to be assisted further by any medical expert, and if this is true his report is hardly likely to be of the value to public health workers in South Africa that might otherwise have been expected. At the time of writing a few of the returns for individual towns have been published, and indicate the enormous difficulties that health officers are faced with in South Africa in attempting to furnish vital statistics for their areas in inter-census years owing to the effects of emigration and immigration. Thus the returns for East London show that the total population of the municipality is 21,777, of which number 12,552 are Europeans and 8725 non-Europeans, a decrease on the previous Census taken in 1904 of 2122 Europeans and 1821 non-Europeans. The total population for the whole division, urban and rural, is 47,697, comprising 18,179 Europeans and 29,518 non-Europeans, a decrease on the previous Census of 1614 Europeans and 410 non-Europeans. Still more striking are the statistics for Cape Town and other municipalities in the Cape Peninsula. In Cape Town there are 29,933 Europeans and 37,237 non-Europeans, or a total of 67,170 persons, as compared with 44,203 Europeans and 33,465 non-Europeans, or a total of 77,668 persons in 1904. In the suburbs of Cape Town, also, there has been a great reduction in the number of Europeans and a slight increase in the number of coloured inhabitants. Indeed, judging from the figures already published, it would seem likely that there is a large reduction in the European populations of all the coastal towns, and also of most urban centres, not depending on the mining industry—doubtless due to the period of financial depression from which South Africa is only now slowly emerging.

Medical Council Muddle.

It will be remembered that some time ago the majority of the members of the Free State Medical Council resigned as a protest against aspersions cast on that body by General Hertzog. The sequel has been somewhat amusing. It appears that up to the middle of April the Government had taken no steps to fill the vacancies, but that the secretary had received instructions from the Minister to register, although quite illegally, any applicant for registration whose qualifications would otherwise entitle him to registration in accordance with the laws of the province. Four gentlemen were, however, eventually appointed as Government nominees, none of the former nominees being reappointed. These with two representatives of the old council who did not resign form a quorum. Another three months had to elapse before an election could be held to fill the vacancies caused by the resignation of certain elected members of the council. In compliance with a request from the permanent head of General Smuts's department that a meeting should be called as soon as possible to deal with pressing business, including the approving formally of the registrations effected by the secretary in the interim, members assembled on April 28th. But after debating the matter for about an hour it was discovered that the meeting had been illegally convened, and that consequently no business could be transacted thereat. Under the regulations of the council it appears that only the president can call together the members on any other day than that fixed by the regulations, which is the second Friday in the month, and so there was nothing for it but to dissolve the meeting until the following month, when the council confirmed the registrations unlawfully effected by its secretary.

June 3rd.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Professor Bernhard Fränkel, who has charge of the Clinic and Policlinic for Diseases of the Throat and Nose, intends to retire at the close of the current summer session, being in his seventy-fifth year.—*Florence:* Dr. Antonio Pellegrini has been recognised as *privat-docent* of Operative Medicine.—*Leipsic:* Dr. Payr, professor in the University of Königsberg, has been appointed to the chair of Surgery, vacated by the death of Professor Trendelenburg.—*Modena:* Dr. G. Tarozzi, professor in Cagliari, has been appointed to the chair of Pathological Anatomy and Histology.—*Parma:* Dr. Giorgio Ballerini has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Turin:* Dr. Saverio Verson of Pavia has been recognised as *privat-docent* of Histology.—*St. Petersburg (Women's Institute of Medicine):* Dr. A. Rubel has been recognised as *privat-docent* of Medicine.—*Vienna:* Dr. Otto von Frisch has been recognised as *privat-docent* of Surgery, Dr. Robert Cristopholetti as *privat-docent* of Midwifery and Gynæcology, Dr. Bertold Spitzer as *privat-docent* of Odontology, and Dr. Robert Stigler as *privat-docent* of Physiology.

Obituary.

SIR RUBERT WILLIAM BOYCE, M.B. LOND., F.R.S.,

HOLT PROFESSOR OF PATHOLOGY, UNIVERSITY OF LIVERPOOL; DEAN OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

IN our issue of last week we briefly announced the death of Sir Rubert Boyce on June 16th after a short illness. Rubert William Boyce came of Irish stock. His father, the late R. H. Boyce, C.B., was principal surveyor of buildings in the Consular Service, and both his grandfathers were country practitioners of medicine in Ireland. He studied at University College, London, Heidelberg, and Paris, and qualified in 1888 as L.R.C.P. Lond., M.R.C.S. Eng., obtaining the M.B. degree of the University of London in the following year. Whilst working at University College, London, he showed considerable powers of scientific investigation, and in the early "nineties" he published various papers on the pathology of the nervous system, which earned for him the Fellowship of the Royal Society. During this time he also wrote a "Text-book of Morbid Histology," and was part author of "A Handbook of Pathological Anatomy (Museum Pathology)." In 1894 he was appointed to the newly created George Holt chair of pathology in the University College of Liverpool, and thenceforward became intimately associated with that city.

"The new post gave him an opportunity to show that, besides possessing scientific attainments of a high order, he had a great talent for organisation. This was displayed at first in general work for University College, and for the separate University of Liverpool into which that College was shortly elevated. Later he became, with his colleague, Sir Ronald Ross, especially identified with the Liverpool School of Tropical Medicine, of which he was the twin founder with Sir Alfred Jones. He served personally on expeditions of the school on many occasions. He went to Egypt and inspected the result of Sir Ronald Ross's and Dr. Pressat's successful work in Ismailia, which is now comparatively free from malaria. With the consent of the American Government he investigated a serious outbreak of yellow fever at New Orleans. Again, at the special request of the Colonial Office, he visited British Honduras, and drew up an exhaustive report of sanitary conditions there and of prophylactic measures against the dangers of yellow fever. He also visited Central America, and in later years he made tours of the West Indies and West Africa. He was indeed absorbed in tropical research.

The following appreciation of Sir Rubert Boyce is written by one of his oldest and most intimate friends, Professor J. M. Mackay:—"The news of the premature death of Sir Rubert W. Boyce will come like a shock to many, not only in our own country, but also in the tropical and adjacent regions of the Empire, and indeed in scientific and medical circles everywhere. The foundation of the Liverpool School of Tropical Medicine is an event which reaches beyond the annals of medicine. It is the dawn of a new era and a new hope for the tropical world. The development of those countries, the security of life for the European planter, trader, missionary, and administrator, as well as for the native, appear to be staked upon the success of such researches as this Liverpool institution first organised and promoted. The vast issues were clear to the mind of the extraordinary man who devoted his genius and life to this enterprise. Entirely Irish by origin, the son of a well-known public servant, an architect in China, educated himself for a short time at Rugby, afterwards in France, he acquired an education very little on the beaten lines. It was when at work with Sir Victor Horsley in the laboratories in University College, London, that he began to show promise of his real powers. His early scientific work was noted by those who had eyes to discern. His appointment to the new chair of pathology at Liverpool gave him his opportunity and sphere. Everything there on the high educational ground was in the origins and in the making. Boyce had youth, exhaustless, boundless energy, indomitable persistence, and a clear and daring vision. Besides, upon no experience whatever, he found he had the practical gifts as well. He learned to handle men, and in particular what is almost impossible for the ordinary academic spirit, he grew into intimate, easy, and friendly relations with men of business of every sort. Seizing upon the form of certain schools already established in Liverpool, whereby the city and University coöperate through [representatives of the corporation, the academic staff, and governing body, or of others interested by professional sympathy, he created first the School of Hygiene for the training in public health on all points, human and animal. It was the natural expansion of his chair of pathology into the actual world. He soon had municipal pathological work inside the university pathological department also. The chief danger in a provincial city is the multiplication in a hurry, and with a waste of money, of feeble organs here and there, instead of installing concentrated and powerful spiritual batteries. Of course, this was in due time accomplished in the University. It was the creation, however, of the Tropical School which swept open for Boyce a boundless prospect. Here he had associated with him Sir Alfred Jones, a shipowner trading with West Africa, who was himself only emerging at the time, but as Boyce used to say, 'Alfred Jones is a poet.' Boyce's tributes to Sir Alfred Jones living and dead were constant and unstinted, and the union of science and practice on great imaginative lines had remarkable results. The annual income of the Liverpool School of Tropical Medicine now amounts to some £8000, besides the fully endowed chair of tropical medicine, the gift of Sir Alfred Jones.

"The appointment of Professor Ronald Ross to the chair was yet another stroke of genius, for Ross was not yet fully recognised. To carry forward their work the money had to be obtained. In a country where there are little or no public subventions the only course open is the familiar way of all the public charities. Boyce's success as a beggar was marvellous, and he conducted his campaign with shrewd and infinite humour. It became a game where none was more amused than the wealthy and generous man who meant to be close and found he had subscribed handsomely. The two promoters of the school believed in a wide subscription-list as indicative of sound general health and public interest. Scientific expeditions were constant, and a programme which had started with the one item of malarial fever soon included all tropical medicine. Boyce visited in due time New Orleans, upon an outbreak of yellow fever there, British Honduras, West Indian Isles, British Guiana, and West Africa. These were successful missions, for besides his scientific and special interests nothing human or natural was unwelcome to him. He met on these tours minds of every shade, and his own judgments, which he revised upon the pressure of new material, became vivid and instructive. His success, scientific and financial, at the Colonial Office and with Governors and officials was remarkable. The story of these distant visits and missions, and the conclusions which he thought ought to be drawn, have been published in three recent works, in addition to all the bulletins regularly published from the school, while his signal achievements in the Liverpool laboratories are well known. The network of his propaganda was wide-flung and close-meshed. The Liverpool school became a pattern, an inspiration, and a source of light for many lands and workers. It is the most famous intellectual achievement in the city.

"Meanwhile he was in the forefront of another great educational movement—the establishment of an independent University in Liverpool on advanced and varied lines—and spent probably his happiest public hours amid a small band of colleagues and friends at the University Club. The club became a centre for such as cared to share in the University movement or to promote any high educational advance. It started on next to nothing. Boyce's practical gifts here, even to the house furnishing, were invaluable. His manifold enterprises had inevitably roused opposition, but here he was at home among friends and allies. His personal influence and the confidence he inspired attracted sympathetic citizens of all parties and creeds into membership with communion and coöperation. The University of Liverpool in a few years was launched from this dock. About this time a great shadow darkened his life, for he lost his wife, who died after the birth of her first child and with whom he had lived most happily. To commemorate her life her father, a local shipowner, by a magnificent gift to the University, provided new laboratories, which became the home of the Tropical School, and founded a new chair of bio-chemistry, the first in this country. Here was another instance of Boyce's keen vision which went to the heart of the last results of contemporary

foreign medicine. Developments no less striking followed at Liverpool, such as an Institute for Cancer Research, and an Institution of Tropical Research in regard to trade and industry and agriculture. This last splendid conception was doomed, it might be said, in advance, owing to the lack of trained investigators, but in all the movements Boyce played a leading part. Our university system of daily prescribed doses, and repeated examinations upon them, does not breed often men of this quality.

"In figure Boyce was fair, small, light, and active. During the brief tenure of his life in Liverpool, some 15 years in all, and only nine in full health, he had as his home a delightful nook near to one of the great public parks. There he entertained with wide hospitality visitors from many cities, countries, and climes. After a paralytic stroke six years ago—which shattered his health, temper, and balance—he recovered very gradually, and as he grew better he devoted himself wholly to the study of the tropics. It was the passion of his life. His end was sudden and peaceful. Only the day before he was entertaining a West African magistrate, originally a medical man like himself, and two of his old colleagues and close friends. His vivacity and intellectual sympathies, his opinions on nature and man, his criticism of antiquated and futile methods, whether on the Coast or in the universities, were as fresh, searching, piquant, and independent as before. It was the dying flicker. The simplest record of his life, the barest account of his solid achievements, will perpetuate the memory of a rare and extraordinary mind."

Sir Rubert Boyce was only 48 years of age at his death, which, despite the serious breakdown alluded to by Professor Mackay and his known delicacy of health, was quite unexpected. The day before his death he was at work in the Thompson Yates laboratories with his accustomed zeal. On June 7th he was at a banquet given by Mr. W. H. Lever, the chairman of the Liverpool School of Tropical Medicine, to speed Professor Newstead on his expedition to Nyasaland and to welcome Professor J. L. Todd and Professor Wolbach home from their expedition to the Gambia and French Senegal. Sir Rubert Boyce, in responding to the toast of "Tropical Medicine and Commerce," then expressed the hope that soon the dream of the late Sir Alfred Jones would be realised in the establishment of a chair of parasitology at the University of Liverpool in memory of the late Dr. Walter Myers. His last public utterance, therefore, was fittingly in support of the cause for which he lived and died.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ernst Julius Remak, privy councillor and extraordinary professor of neurology in the University of Berlin. He had been Westphal's assistant in the Charité in the "seventies." His contributions to medical literature were mostly connected with electro-therapeutics. He was nearly 62 years of age, and he died in a nursing home in Wiesbaden. His name reminds us of that of his illustrious father, Dr. Robert Remak, the anatomist, who was the first Jew who was admitted to the teaching staff of the Berlin University, a special decree being granted by King Frederick William IV. for the purpose.—Dr. Ludwig Kerschner, professor of histology and embryology in the University of Innsbruck.—Dr. Adolf Schmidtmann, curator of the University of Marburg and for many years a very prominent and active government sanitary councillor. His special work was mainly that of superintending the water-supply and drainage of the city.—Dr. A. Valentin, honorary professor of laryngology and otology in the University of Berne, aged 65.—Dr. Stanford E. Chaillé, professor of physiology and pathological anatomy in Tulane University of Louisiana, New Orleans.—Dr. Maurice Claudot, formerly Inspector-General in the French Military Medical Service.—Dr. A. Guinard, surgeon to the Paris hospitals.

PROPOSED NEW COTTAGE HOSPITAL FOR AXMINSTER (DEVON).—It is proposed to erect a new cottage hospital for Axminster, as the old institution is not up to modern requirements. The sum of £1830 has been already received towards the building fund, and it is hoped that the work will shortly be commenced.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. H. Budd (Section II.), St. Mary's Hospital; R. F. Eminson (Sections I. and II.), Charing Cross Hospital; and A. A. E. Newth (Sections I. and II.), Westminster Hospital.
Medicine.—N. S. Adler (Section I.), Berlin; L. K. Edmeades (Section I.), Guy's Hospital; R. F. Eminson (Sections I. and II.), Charing Cross Hospital; C. C. Messiter (Sections I. and II.), St. Bartholomew's Hospital; A. A. E. Newth (Sections I. and II.), Westminster Hospital; and G. H. Varley (Sections I. and II.), Oxford and St. George's Hospital.
Forensic Medicine.—R. F. Eminson, Charing Cross Hospital; C. C. Messiter, St. Bartholomew's Hospital; and A. A. E. Newth, Westminster Hospital.
Midwifery.—H. Cox, Birmingham; R. F. Eminson, Charing Cross Hospital; A. A. E. Newth, Westminster Hospital; and J. E. Taylor, Leeds.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery:—H. H. Budd, R. F. Eminson, A. A. E. Newth, and G. H. Varley.

UNIVERSITY OF OXFORD.—Dr. C. Theodore Williams, honorary Fellow of Pembroke College, has offered to the University a sum of £2500 upon trust to apply the income to the encouragement of the study of pathology and bacteriology in relation to medicine. It is proposed to found two scholarships, each tenable for two years. A decree has been introduced in Convocation gratefully thanking the donor.

DONATIONS AND BEQUESTS.—Under the will of the late Miss Anna Thorne Harris of Plymouth the South Devon and East Cornwall Hospital at Plymouth will receive £2000, the South Devon and Cornwall Institution for the Blind at Plymouth £1000, and the Plymouth Royal Eye Infirmary and the Plymouth Public Dispensary £500 each.—Miss Burrell of Botley, Hants, has undertaken to defray the cost of building a new out-patient department for the Royal South Hants and Southampton Hospital at a cost of more than £10,000.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The seventieth annual meeting of this association will be held on Thursday and Friday, July 13th and 14th, in Dublin, under the presidency of Dr. William R. Dawson. On Wednesday members will be given an opportunity of inspecting the Richmond Asylum, St. Patrick's Hospital, and the Stewart Institution. The annual meeting will commence at 11 A.M. on Thursday at the Royal College of Physicians, and the presidential address will be delivered after luncheon. The following papers will then be read:—Dr. G. M. Robertson (Morningside), Treatment of General Paralysis, with a view to Cure; Dr. W. Graham (Belfast), Psycho-therapy in Mental Disorders; Dr. M. J. Collins (Ewell Colony) will read a paper upon Causes of Sudden Death in Epilepsy and Some Points in the Treatment of Epilepsy; Dr. R. R. Leeper (St. Patrick's Hospital), Note on Hereditary Insanity from a Practical Standpoint. At 7.30 P.M. the annual dinner will be held at the Royal College of Surgeons, St. Stephen's Green. On Friday, commencing at 9.30 A.M., at the Royal College of Physicians, the following papers will be read:—Dr. T. Drapes (Enniscorthy), the Personal Equation in Alienism; Professor A. C. O'Sullivan, F.T.C.D. (Dublin University), Case of Degeneration of the Spinal Cord, following Infection with B. pyocyaneus; Professor J. Shaw Bolton (Wakefield), Certain Observations on the Morbid Histology of General Paralysis; Dr. Colin McDowall (Cheddleton) and Dr. W. T. Sewell (Newcastle), Clinical Evidence *re* the Toxic Nature of Insanity; Professor W. H. Thompson (Dublin University), the Chemical Regulation of Neuronic Function; Dr. Edward Mapother (Long Grove), Mental Symptoms in Association with Choreiform Disorders; Dr. J. J. Fitzgerald (Cork), Trephining in Mental Diseases; Dr. Ivy Mackenzie (Glasgow), Salvarsan in Nervous Disease: with an account of its Effect in Syphilitic and Parasyphilitic Conditions. From 4.30 to 7 P.M. a garden party will be held at the Zoological Gardens, Phœnix Park; and various other social arrangements have been made by the reception committee. The honorary general secretary is Dr. C. Hubert Bond, 11, Cavendish-square, London, W.

KING EDWARD MEMORIAL HOSPITAL, EALING.—The opening of the new hospital in Mattock-lane will take place on Saturday, July 15th, at 4 P.M., when H.R.H. the Princess Christian of Schleswig-Holstein has consented to perform the ceremony. Tea and coffee will be served at 4.45. Visitors are requested to be in their places by 3.45 at the latest.

PRESENTATION TO A MEDICAL PRACTITIONER.—At Ottery St. Mary (Devon) the vicar, the Rev. J. Metcalf, on behalf of 525 subscribers, recently presented Mr. Francis Mortimer Reynolds, M.B., C.M. Edin., with a silver rose bowl and an album containing the names of the subscribers as a mark of respect and esteem on the occasion of his leaving the neighbourhood after having practised there for the past 25 years.

CHELSEA HOSPITAL FOR WOMEN.—Lord Cadogan has presented over an acre and a quarter of land to the hospital for purposes of extension. The accommodation for in-patients is at present inadequate, and it is also impossible to provide for the needs of out-patients and to house the nurses satisfactorily. The land given by Lord Cadogan is within a short distance of the present building.

MEDICO-LEGAL SOCIETY.—The annual general meeting of this society will be held at the Holborn Restaurant on Thursday, July 20th, at 6 30 P.M. The annual dinner will be held at 7.30 P.M., when the President will be in the chair. The price of tickets is 10*s.* 6*d.* each. Members intending to be present are desired to give early notice to Dr. William A. Brend or Mr. Roland Burrows, the honorary secretaries.

DEVON COUNTY ASYLUM.—At the last meeting of the Devon county council the asylum committee reported in favour of the appointment of a fifth medical officer for the County Asylum, who should also undertake the duties of pathologist and bacteriologist. It was also suggested that a laboratory should be provided. The county council adopted the report of the committee. It was stated that at present there were 1338 patients in the institution, 568 males and 770 females.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.—The next meeting of this Congress will take place on Thursday and Friday, July 13th and 14th, at Keble College, Oxford. It will be preceded by an unofficial dinner in Keble Hall on July 12th, at 7.30 P.M. Medical men when sending in their names as prospective attendants at the Congress to the honorary secretary, Mr. Sydney Stephenson, 33, Welbeck-street, London, W., should enclose the attendance fee of half-a-guinea, and should also state whether they desire rooms to be reserved for them in Keble College, the charge for board and lodging in the College being 7*s.* 6*d.* The Congress will be opened at 10 A.M. on Thursday, July 13th. Addresses will be made by Professor Arthur Thomson on the Filtration Angle, Dr. Lieven on "Salvarsan," and Major R. H. Elliot, I.M.S., on Trephining in Glaucoma. In the afternoon there will be tea in Balliol College garden, and at 7.30 P.M. the official dinner will take place in Keble Hall with Sir William Osler in the chair, followed by dessert in the Junior Common Room at Keble College. On Friday, July 13th, addresses will be delivered by Professor Francis Gotch, F.R.S., on Dark Adaptation, and Dr. Harold Low on Narcotic Drugs as Adjuvants to General Anæsthesia; and a lantern demonstration by Dr. StClair Thomson of the relationship of diseases of the nose and accessory sinuses to affections of the eye and orbit will be given. In the afternoon there will be tea at the Eye Hospital, and a visit will be made to the Clarendon Press and the Colleges, followed by dinner in Keble Hall, and a smoking concert in the Junior Common Room at Keble College. On both days there will be demonstrations in the morning in the Department of Physiology and in the afternoon at the Eye Hospital. On Thursday afternoon Dr. Lewis Ziegler (Philadelphia) will demonstrate: (1) the Treatment of Ectropion and Entropion by galvano-cautery puncture, (2) that of Lacrymo-nasal Disease by rapid dilatation, and (3) Iridotomy with the knife-needle; and Mr. Charles Higgens (London) will perform Toti's operation of Dacryocystorhinostomy. On Friday afternoon cases treated by salvarsan will be shown by Dr. R. Granville Waddy, and Dr. Lieven will demonstrate the intravenous injection of that preparation. On Saturday, July 15th, there will be river excursions to Reading and Henley.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Coronation.

PARLIAMENT was not sitting during the period of the Coronation festivities in London last week.

National Insurance Bill.

Many amendments have been put down to the National Insurance Bill. Mr. HAROLD SMITH has put down amendments to Clause 14 in the same terms as those of Dr. ADDISON reported in THE LANCET of June 24th. Dr. ADDISON has intimated his intention of moving the insertion of the following subsection in Clause 16:—

"Notwithstanding anything herein the mother shall decide whether she shall be attended by a registered medical practitioner or by a duly certified midwife and shall have free choice in the selection of such practitioner or midwife, and in the case where a midwife requires the aid of a registered medical practitioner the Local Health Committee shall make arrangements subject to the approval of the Insurance Commissioners for the payment of such registered medical practitioner."

HOUSE OF COMMONS.

MONDAY, JUNE 19TH.

National Insurance and the Supply of Drugs.

The Marquis of TULLIBARDINE asked the Chancellor of the Exchequer whether he was aware that a per capita payment for the supply of drugs would deprive insured persons of many remedial agents; and whether, in the interests of insured persons, the Commissioners would frame a scale of prices based on the cost or market price of the commodity; and whether, in that event, insured persons would be permitted to obtain their supplies from any registered chemist accepting such a scale.—Mr. LLOYD GEORGE replied: The supply of drugs is, under the Bill, a matter for the approved societies and the Local Health Committees, who need not adopt a per capita system. The Insurance Commissioners are not specially empowered to interfere, except in so far as they must, as a condition of approving of any society, satisfy themselves that the society is providing the benefits prescribed by the Bill.

Famine Deaths in India.

Mr. GINNELL asked the Under Secretary of State for India to state the number of deaths of human beings from starvation in India in each of the last ten years and in the whole period.—Mr. MONTAGU replied: The information asked for by the honourable Member is not forthcoming from the mortality returns of British India, as they do not show "starvation" as a separate cause of death. In times of famine special efforts have been made to secure a correct record of all deaths attributable directly to want of food, but without much success. In the 1907-8 famine in the United Provinces not more than 11 deaths were thus recorded. Famine mortality is due to the consequences of insufficient food, not to entire want of it.

Plague in India.

Mr. GINNELL asked the Under Secretary of State for India how many of the 6½ millions of human beings known to have died from plague in India within the last ten years died from bubonic plague and how many from pneumonic plague; and whether the Government proposed to convene an international medical conference in India next winter to devise means of counteracting this scourge.—Mr. MONTAGU answered: The returns of plague seizures in India do not distinguish cases where the symptoms are bubonic from those that take septicæmic or pneumonic forms. But it may be said that more than 90 per cent. of the cases take the bubonic form. There is no intention of convening an international medical conference in India to deal with the question of plague prevention. The scientific problems have already been elucidated by the Joint Commission organised by the Royal Society and the Lister Institute, and the practical application of the Commission's discoveries is a matter for the Indian Government.

TUESDAY, JUNE 20TH.

Deaths from Chicken-pox.

Mr. CRAWSHAY-WILLIAMS asked the President of the Local Government Board whether any inquiry was made in cases of certified deaths from chicken-pox with a view to ascertain if such cases of deaths in children were in reality due to small-pox and not chicken-pox, as alleged by the Registrar-General in his Forty-sixth and other Reports; and whether such inquiry had confirmed the opinion generally held by medical authorities that deaths from chicken-pox were of very rare occurrence indeed.—Mr. BURNS wrote in reply: The doctor who grants a death certificate is required to state the cause of death, and, as a general rule, no inquiry is made to check the correctness of his statement. When small-pox is prevalent in a district, chicken-pox is frequently added to the list of notifiable diseases with the object of discovering whether any cases supposed to be chicken-pox are really small-pox. In such cases it would rest with the medical officer of health of the district to make such inquiries in regard to any deaths certified to be due to chicken-pox as he considered necessary.

The Spread of Measles in Schools

Mr. SNOWDEN asked the President of the Local Government Board whether, under the regulations issued by the chief medical officer of the Board, children might attend the public schools, although they came from homes in which at the time other children were suffering from measles; and whether he was aware that the school attendance officers,

acting under instructions from the local medical officer of health, whose action in this matter was governed by the Local Government Board regulations, insisted upon a child attending school if it had once had measles, although its brothers and sisters might be suffering from the disease; and, in view of the loss of child life from measles, would he take steps to make the regulations for dealing with this disease more stringent.—Mr. Burns wrote in reply: No regulations on this subject have been issued, but a memorandum was prepared jointly by the medical officers of the Local Government and Board of Education, which contains rules for the guidance of the officials concerned. These rules are based on present medical knowledge, and I am advised that such knowledge would not justify a modification of the rules in the direction suggested in the question.

MONDAY, JUNE 26th.

The Composition of Patent Medicines.

Mr. CHANCELLOR asked the Secretary of State for the Home Department whether he had received a communication from the Royal College of Physicians recommending that manufacturers and vendors of patent medicines should be compelled to print on the labels of the bottles or other vessels the exact composition of such medicines and the amount of each constituent; and whether, if he gave effect to this recommendation, he would take steps to make the rule applicable to the various vaccines and sera imported from abroad and those manufactured in this country.—Mr. CHURCHILL replied: I have been in correspondence with the Royal College of Physicians on this subject. I have no authority to take the steps suggested, but I think that the question of the conditions of the sale of patent medicines might usefully be considered by a Select Committee next session. I cannot at present express any opinion as to whether the inquiry should be extended to vaccines and sera.

National Insurance Topics.

Mr. JOYNSON-HICKS asked the Chancellor of the Exchequer whether he was aware that the medical profession was practically unanimous in asking for a wage-limit beyond which free medical benefit should not be given; and whether he could state, for the information of the House, his exact reasons why such wage-limit was impossible.—Mr. WEDGWOOD BENN (answering on behalf of Mr. LLOYD GEORGE) said: I fear it would be impossible to argue a complicated question such as this is in reply to a Parliamentary question, but I will refer the honourable Member to the passages dealing with the subject in my right honourable friend's speech on the second reading of the Bill on May 29th.

Mr. JOYNSON-HICKS also asked whether the Chancellor of the Exchequer had yet considered whether, in the management of consumption sanatoria and regarding patients who proved to be incapable of recovery, they would be kept in the sanatoria or sent home to die, as was the very common practice at the present time, thus spreading the disease over a wider circle.—Mr. WEDGWOOD BENN answered: The administration of sanatorium benefit will be in the hands of the Local Health Committees.

Home Office Administration.

On the House going into Committee of Supply on the Home Office vote,

Mr. J. W. HILLS called attention to the prevalence of lead poisoning. In 1896 the number of cases of lead poisoning in the Potteries was rather more than 400 a year. As a result of legislation, in the next four years they dropped to half, or 200 a year. As a result of further legislation, by 1901 they had dropped to about 100 a year. For the last ten years there had been no real decrease in the cases of lead poisoning in the Potteries. During the last eight years the figures had remained exactly as bad as they were. There did not seem very much hope under present conditions of their getting better. It might be thought by the Committee that the figure of 100 cases of lead poisoning a year was not a very large figure. He would grant that it was not, but the total harm to the community was not measured by the actual figure. Lead poisoning was a very insidious disease, and one which in its early stages was very hard to trace. Above all, its effect on women was extremely deleterious. It affected them in a very strange and remarkable way, and the result was that where women were exposed to lead poisoning their liability to miscarriage was very largely increased and stood at about three times that of the average of the community. He was inclined to think that the only real solution would be found by prohibition, either partial or complete, of the use of raw lead glazes, and the report of the Departmental Committee on Lead Poisoning pointed out that in connexion with a great many articles, and especially cheap coarse articles, the use of non-lead glazes was just as cheap as raw-lead glazes. He did not believe that this country alone could prohibit the use of lead glazes. The only way the subject could be adequately dealt with was by international agreement on the lines of prohibition, as was the case with white phosphorus in the match trade. He would urge the Home Secretary to take advantage of the next International Labour Conference to ventilate the subject and see whether it was not possible to get some international agreement in order to stamp out this evil. He believed that if a determined effort was made to tackle this evil a solution would be found.

Mr. GILL in the course of a speech referred to the Workmen's Compensation Act and medical referees. When Lord Gladstone was Home Secretary and the House of Commons was considering the Act, the point was pressed upon him that there ought to be State medical referees appointed who were not engaged in private practice. Lord Gladstone at that time had said he thought that it would be too expensive, that the cases were comparatively not numerous, and that it would cost the State too much, as medical referees could not be got without paying them a very large salary. Lord Gladstone, however, made a promise that an experiment should be tried by the appointment of a few such medical referees, but that promise had not been yet carried into effect. There was a very great dissatisfaction throughout the whole of the country in regard to the question of medical referees. As a rule they were engaged in private work, and naturally it was suggested that they could not very well be free from bias. There were medical referees engaged by insurance companies—not, of course, in the cases in which they acted as medical referees, but in other cases—and seeing that they got part of their income by examining persons who had been injured and that they were employed by the companies there must be a natural bias in that direction. But whether there was a bias or not there was a feeling amongst the workers that they were not getting fair treatment in regard to this matter. He had in connexion with his own society found persons who had been examined by medical referees and declared to be permanently cured, and later the very same people had been paid off as permanently disabled, and they had not been able to work since. There was no appeal from the medical referees, and Parliament ought to have the element of unfairness taken away by the appointment of State-paid officials who would be able to devote their whole time to the work, and in whom the people would have confidence.

Mr. CHURCHILL (the Home Secretary) said that attention had been called to the Workmen's Compensation Act, especially in regard to the appointment of medical referees. He was inclined to agree that the time was fast approaching when a committee of inquiry should investigate the conditions of the industry of the country with reference to workmen's compensation. He had, therefore, given instructions to the Home Office, and the officials were now beginning to collect materials, and when those materials had been obtained he believed that the question would arise in a very practical form next year. When the committee reported the cycle of years would come round again when special legislation on the subject could be introduced. On the question of lead poisoning he quite agreed with the honourable Member (Mr. Hills) that although the number of cases was small the evil was great and preventable to a very large extent, and it was the duty of Parliament to exert itself to stamp it out altogether. The Departmental Committee appointed in 1908, after a very thorough investigation, made a report which was published last autumn, and that report had, on the whole, been well received by the trade. Some of the proposals in the report led to representations being made from the manufacturers, and the Home Office thought that the best way to deal with them would be to call the committee together to consult them again through their chairman, who had taken an immense amount of trouble, and the result was that a few modifications of detail had been approved. Regulations following on the committee's recommendations were about to be issued in draft. He was asked whether they would be ready for this debate, but they were in the last stage before they went to the printer. He thought that he had said enough to show the House that on nearly all the lines which had been referred to it the Home Office was moving steadily forward. On some matters action had been already taken, some had reached the stage where action only awaited Parliamentary authority, and others had reached a point where a new inquiry was necessary, as in the case of the Workmen's Compensation Act; but on all these lines, and without wasting time, the Home Office was doing its very best to bring the system of factory legislation abreast of, and in front of, the system of any other country in the world.

Mr. WEDGWOOD pointed out that lead poisoning was very serious in the coach-building trade as well as in the pottery trade. He wanted regulations in the pottery trade for ensuring cleanliness in the shops and on the part of the workmen. Once places where lead processes took place were put under decent conditions there would be a state of things which would go a long way towards eliminating lead poisoning in the potteries. By far the best way was to secure that the monthly examination should be thoroughly efficient. The people in the pottery area were examined once a month by certifying surgeons. Those certifying surgeons were not whole-time officials. They were medical men engaged in general practice, and they were paid for the examinations which they made by the manufacturers. The payments amounted in some cases to £700 a year. One medical man, he was informed, examined as many as 1800 persons a month. Those people filed in front of him. In these circumstances the examination was nothing more than a farce. Both masters and men wanted to see these certifying surgeons whole-time officials, so that the examination of the workpeople might be a really satisfactory examination which would detect the first traces of lead poisoning and so prevent the growth of it. The present position of the certifying surgeons was causing a great deal of discontent in the whole of North Staffordshire. These gentlemen could not possibly do the work properly so long as they had to engage in competition for other work.

Mr. JOHN WARD also spoke on the subject of lead poisoning, and said that it was desirable that the Home Secretary should announce when the suggestions made by the committee on lead poisoning were to be put into operation.

The vote was subsequently agreed to.

BOOKS, ETC., RECEIVED.

APPLETON AND CO., D., New York and London.

Prevention of Infectious Diseases. By Alvah H. Doty, M.D., Health Officer of the Port of New York. Price 10*s.* 6*d.* net.

Plastic and Cosmetic Surgery. By Frederick Strange Kolle, M.D. Price 21*s.* net.

CHAPMAN AND HALL, LIMITED, London.

England's Recent Progress. An Investigation of the Statistics of Migrations, Mortality, &c., in the Twenty Years from 1881 to 1901 as indicating Tendencies towards the Growth or Decay of Particular Communities. By Thomas A. Welton, F.S.S., F.C.A. Price 10*s.* 6*d.* net.

DOIN, OCTAVE ET FILS, Paris.

Lavage et Masso-Lavage du Colon, Technique et Indications. Par J. Baumann, Médecin consultant à Châtel-Guyon. Price M.12.

ERFURT, H., VERLAG VON, Davos, Switzerland.

Carl Spengler. Tuberkulose- und Syphilis-Arbeiten. Herausgegeben von seinen Schülern und Freunden. Price not stated.

HIRSCHWALD, AUGUST, Berlin.

Der Gynäkologische Operationskursus an der Leiche. Mit besonderer Berücksichtigung der Operations-Anatomie, der Operations-Pathologie, der Operations-Bakteriologie und der Fehlerquellen. In sechzehn Vorlesungen. Von Dr. Wilhelm Liepmann, Privatdozent für Geburtshilfe und Gynäkologie an der Friedrich Wilhelms-Universität zu Berlin. Price M.22.

LAURIE, T. WERNER, Clifford's Inn, London, E.C.

Famous Castles and Palaces of Italy. By Edmund B. D'Auvergne, Author of "The English Castles." Price 15*s.* net.

LEHMANN, J. F., München.

Fortpflanzung, Vererbung, Rassenhygiene. Katalog der Gruppe Rassenhygiene der Internationalen Hygiene-Ausstellung 1911 in Dresden. Herausgegeben von Prof. Dr. Max von Gruber, Vorstand des hygienischen Instituts in München und Priv.-Doz. Dr. Ernst Rüdin, Oberarzt an der Psychiatrischen Klinik in München. Erklärender Text mit 230 Abbildungen von M. v. Gruber, nebst einem Bibliographischen Anhang von Dr. Rudolf Allers. Price M.3.

LEWIS, H. K., London.

On Diseases of the Lungs and Pleuræ, including Tuberculosis and Mediastinal Growths. By Sir R. Douglas Powell, Bart., K.C.V.O., M.D. Lond., F.R.C.P., Physician-in-Ordinary to H.M. the King, and P. Horton-Smith-Hartley, M.V.O., M.A., M.D. Cantab., F.R.C.P. Fifth edition. Price 21*s.* net.

Practical Forensic Medicine. A Police-Surgeon's Emergency Guide. By C. Graham Grant, L.R.C.P. & S. Edin., V.D., Lieut.-Col. R.A.M.C. (T.), Barrister-at-Law (Gray's Inn), Divisional Surgeon, H and Thames Divisions, Metropolitan Police. Second edition. With which is a Chapter on Fees by Herbert Austin, Barrister-at-Law, Taxing Master, Central Criminal Court, &c. Price 2*s.* net.

MERCK AND CO., New York, St. Louis, and Rahway.

Merck's Manual of the Materia Medica. A Ready Reference Book for the Physician and Surgeon. Fourth edition. 1911. Price not stated.

OLIVER AND BOYD, Edinburgh.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by Sir John Batty Tuke, M.D., and James Ritchie, M.D. Vol. X. and Vol. XI. Price not stated.

SPRINGER, JULIUS, Berlin.

Jahrbuch für orthopädische Chirurgie. Bearbeitet von Dr. Paul Glaessner, Orthopädischer Assistent der chirurgischen Universitäts-Poliklinik in der Kgl. Charité zu Berlin. Erster Band: 1909. Zweiter Band: 1910. Mit einem Vorwort von Professor Dr. Pels-Leusden. Price, two volumes bound together, M.10, or each volume bound separately, M.6. (In future one volume will appear annually.)

THIEME, GEORG, VERLAG VON, Rabensteinplatz, 2, Leipzig.

Die Zeugung beim Menschen. Eine sexualphysiologische Studie aus der Praxis. Von Dr. med. Hermann Rohleder, Spezialarzt für Sexualleiden in Leipzig. Mit Anhang: Die künstliche Zeugung (Befruchtung) beim Menschen. Price M.7.

Zabludowski's Technik der Massage. Dritte, veränderte und vermehrte Auflage. Bearbeitet von Dr. J. Eiger, Leitender Arzt des Berliner Ambulatoriums für Massage. Price M.4.

TOWNSHEND, TAYLOR, AND SNASHALL, Printers, Cape Town.

Transactions of the South African Medical Congress (Twelfth Meeting), Cape Town, Oct. 31st to Nov. 5th, 1910. Published by the Transactions Committee of the Congress.

VIGOT FRÈRES, Paris.

Contribution à l'Étude de l'Opothérapie Mammaire dans les Hémorragies et dans le Fibrome de l'Utérus. Par le Docteur Jacques Luncz de la Faculté de Médecine de Paris. Price not stated.

Du Rôle de la Cholestérine dans le Développement de l'Artério-Sclérose et de l'Athérome. Étude Clinique et Thérapeutique. Par le Docteur G. Lemoine, Professeur de Clinique médicale à la Faculté de Médecine de Lille. Price FR. 1.50.

WILLIAMS AND NORGATE, London.

In and Out of Parliament: Reminiscences of a Varied Life. By the Right Hon. Robert Farquharson, P.C., M.D., LL.D. Price 12*s.* 6*d.* net.

YEAR BOOK PRESS, THE, 25, High-street, Bloomsbury, London, W.C.

The Girls' School Year Book (Public Schools). The Official Book of Reference of the Association of Head Mistresses. Sixth Year of Publication. 1911. Price 2*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BRANWELL, CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Fifth District by the Penzance Board of Guardians.

CANILLA, G., L. & L.M.R.C.P., L. & L.M.R.C.S. Irel., has been appointed Consulting Medical Officer to the Calamor Mining Company of Spain and to the Cordoba Copper Mines, Spain.

CASSIDY, MAURICE ALAN, M.D. Cantab., M.R.C.P. Lond., has been appointed Physician to Out-patients at St. Thomas's Hospital.

COOKE, EMILY SUSAN, M.B., B.S. Lond., has been appointed Assistant (Female) Medical Officer at the General Post Office.

DWYER, H. DE B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Banbury District of the county of Oxford.

EDGAR, T. BOWMAN, M.B., Ch.B. St. And., has been appointed Junior House Surgeon to the Dumfries and Galloway Infirmary.

FENWICK, CHARLES, L.R.C.P. & S. Edin., has been appointed District Medical Officer by the St. Thomas's (Exeter) Board of Guardians.

HICHENS, FRANK, M.D., B.S. Lond., M.R.C.S., L.S.A., D.P.H., has been appointed Medical Officer for the Stithians District by the Redruth (Cornwall) Board of Guardians.

HOWARTH, WALTER G., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Surgeon-in-Charge of the Throat Department at St. Thomas's Hospital, and Surgeon-Laryngologist to the City of London Hospital for Diseases of the Chest, Victoria Park.

MACDONALD, JOHN FINLAY, M.D., Ch.B. Glasg., D.P.H. Camb., has been appointed Medical Officer of Health for the Auckland Rural District, county Durham.

MCELDOWNEY, W. P., M.B., B.Ch. R.U.I., has been appointed Honorary Physician to the Royal Portsmouth Hospital.

MACPHERSON, W. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Topsham District of the county of Devon.

MARTIN, ROBERT, L.R.C.P. & S. Edin., has been appointed Medical Officer to the Post Office at Banbridge, including Corbet, Edinordinary, Garvaghy, and Lenaderg.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN PROVINCIAL COMMITTEE FOR THE TRAINING OF TEACHERS.—Medical Officer and Lecturer on School and Personal Hygiene. Salary £400 per annum.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Locum Tenens. Salary 3 guineas per week, with board and lodging.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BURY INFIRMARY.—Senior House Surgeon. Salary £110 per annum, with board, residence, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Also Second House Surgeon. Salary in each case £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Surgeon and House Physician, unmarried. Salaries £80 and £70 per annum respectively, with board, lodging, and washing.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COUNTY OF LONDON.—Assistant Medical Officer (Education). Salary £500 per annum.

COVENTRY, CITY OF, SCHOOL CLINIC.—Part-time Oculist and Part-time X Ray Specialist. Also School Dentist. Salary £300 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DARENTH ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £120 per annum, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

GLAMORGAN COUNTY COUNCIL.—Medical Officer. Salary £300 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HOLBORN UNION INFIRMARY, Archway-road, Upper Holloway, N.—Second Assistant Medical Officer. Salary £80 per annum, with board, apartments, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon and House Physician, both unmarried, for six months. Salary in each case £30, with board, residence, &c. Also Locum Tenens for Bacteriologist and Clinical Pathologist.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon. Salary £40 per annum, with board and laundry.

KENT COUNTY COUNCIL.—Assistant to County Medical Officer of Health. Salary £300 per annum.

KIRKMABRECK, PARISH OF.—Medical Officer. Salary £40 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LEICESTERSHIRE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Physician. Salary at rate of £60 per annum, with board and lodging.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

LONDON HOSPITAL, E.—Six Honorary Dental Surgeons.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Assistant Medical Officer for six months. Salary £50 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Honorary Assistant Physician.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 per annum respectively, with board and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Junior House Surgeon. Salary at rate of £80 per annum, with board, attendance, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House Physician. Salary £75 per annum, with board, residence, and washing.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Professor of Physiology. Salary £450 per annum.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Two House Surgeons. Salary £80 each per annum. Also Casualty Officer, unmarried. Salary £60 per annum. All with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, &c.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

PERTH, COUNTY AND CITY OF PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60 per annum, with board.

PRESTON ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Dental Surgeon.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Honorary Anæsthetist.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Surgeon.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with rooms, board, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, washing, &c.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, &c.

WADSLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140 per annum, with board, &c.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Medical Officer.

WESTMINSTER HOSPITAL.—Resident Obstetric Assistant for six months. Board and lodging provided.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Carnoustie, in the county of Forfar; at Malmesbury, in the county of Wilts; at Harwich, in the county of Essex; at Market Rasen, in the county of Lincoln; at Newburn, in the county of Northumberland; at South Shields, in the county of Durham; and at Wick, in the county of Caithness.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for Bromsgrove, Redditch, and Droitwich County Courts.

Births, Marriages, and Deaths.

BIRTHS.

JUSTICE.—On June 22nd, at The Manor House, Marylebone, London, N.W., the wife of Captain W. A. Justice, I.M.S., Madras, of a son.

PAYNE.—On June 23rd, at Brunswick House, Kew, the wife of E. L. Payne, M.R.C.S., L.R.C.P., L.S.A., of a son.

ROSS.—On June 22nd, at The Grove Lodge, Sawbridgeworth, the wife of B. Athole Ross, M.D., M.R.C.P., of a son.

TOVEY.—On June 18th, at Kaponga, Taranaki, New Zealand, the wife of Arthur Hamilton Tovey, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

CARLÉ—ELLIS.—On June 17th, at St. Jude's, S.W., Frederick Charles Carlé, M.B. Lond., M.R.C.S., to Elsie Maud, elder daughter of the late Henry Charles Ellis and Mrs. Ellis of Maidstone.

DICKSON—RICE.—On June 24th, at St. Michael's, Bowes Park, N., Robinson Simpson Dickson, M.D., to Marguerite Victoria, eldest daughter of W. G. Rice, Esq., J.P., of Grasmere, Bowes Park, N.

PRETTY—ELLIOT.—On June 17th, at Hampstead, Kenneth Pretty, M.B. Cantab., to Emily Hume, third daughter of the Rev. W. Hume Elliot, of Tooting Common.

DEATHS.

EMMERSON.—On June 22nd, at Guy's Hospital, London, John Bolton Emmerson, M.D. Durh., M.R.C.S. Eng., of Biggleswade, aged 57.

OSBORN.—On June 23rd, at St. Martin's-place, Dover, Ashby Greenough Osborn, M.R.C.S., L.S.A., in his 83rd year.

PLUNKETT O'FARRELL.—On June 22nd, at The Croft, Oxshott, from heart failure, Sir George Plunkett O'Farrell, Knt., M.D., aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"CARAVANNING" FOR HEALTH.

IN view of the importance that is more and more being attached to the open-air life, not only as a preventive, but even as a curative agent in the early stage of tuberculosis, there is a mode of attaining it which for ease, comfort, and convenience can hardly be excelled for those of limited means. All sorts of shelters have been devised, tent life has been recommended, devices for sleeping either entirely out of doors on roofs and balconies, or partly so with head out of window have been vaunted, yet the use of the simple caravan has not met with adequate encouragement from medical men. In "caravanning" is provided a means of outdoor life that is inexpensive in its preliminary outlay, costs ridiculously little in its working, enables one to seek solitude or company at will, permits of all degrees of enjoyment from mere comfort to absolute luxury according to one's means, and abolishes monotony by making frequent change of locality a possibility independent of income. The owner of a caravan can make arrangements with farmers and others in almost any part of the country for a "pitch" for his caravan at a cost varying from a gratuitous "make yourself at home" up to some 5s. or 7s. 6d. a week, the charges, when any are made, including grazing for the horse. As a "pitch" is usually secured near a farmhouse, arrangements can ordinarily be made for an ample supply of fresh milk and new-laid eggs—important items in everyone's bill of fare. For those compelled to go daily to town there should be little difficulty in securing a suitable "pitch" close to one of the railway lines that lead to London from all directions. Except in rainy weather and during the hours of sleep the caravanner usually spends all his time in the open; and even when compelled to be in his van there are means of rendering it freely open to the air, while preserving privacy and ensuring adequate warmth. During the Coronation week the Caravan Club of Great Britain and Ireland, which was founded in 1907 by Mr. J. Harris Stone, and now numbers 250 members, of whom two-thirds own their own caravans, held its annual meet in the beautiful country adjoining the London County Asylum at Cane Hill, Surrey, whose superintendent, Sir James M. Moody, is himself an enthusiastic caravanner. Some 15 vans of various kinds and sizes were assembled there, some having come from the farthest parts of England. Among them was the "Wanderer," the van of the late Dr. Gordon Stables, now inhabited by his widow and daughter. The commodious and serviceable van of Sir James Moody emphasised the æsthetic possibilities of caravanning, while various gipsy vans demonstrated what can be done to provide comfort from a slender purse. Vans can be bought from about £40 to a thousand guineas, to be drawn by horses or by motor power. Being moveable houses they are not taxable. Light portable tents, that can be attached to one side of the van, afford extra sleeping accommodation, or can be used as bathrooms; a very ingenious one, being really a sack, all in one piece, with waterproof floor, roof, sides, and ends, and opening only at one end, but adequately ventilated, was on exhibition. To the sportsman, the entomologist, the botanist, the artist, the photographer, the caravan offers an abundant source of inexpensive entertainment during the pleasant months of the year; but it is to those in search of health through the open-air life that we would especially commend caravanning. If any such will communicate (enclosing postage for reply) with Mr. J. Harris Stone, secretary of the Caravan Club, 358, Strand, London, W.C., they will be put in the way of obtaining all necessary information with regard to hiring, purchasing, building, or equipping of vans, approved "pitches" all over the country with expense thereof, and, in short, of everything pertaining to caravanning.

PEDESTRIANS' PERILS.

IN these days of motor vehicles of all sorts, speeding along at 20 miles an hour, and very frequently at a much faster pace, and of aeroplanes and airships which may at an unexpected moment descend on a crowd of spectators with terrible results, or from which aviators may drop missiles, harmless or otherwise,—in these circumstances it would seem that the mere pedestrian, left behind, as it were, in these days of quick travel, will have to exercise extraordinary care or his safety will be seriously imperilled. It is astonishing, indeed, the risks the ordinary pedestrian is exposed to. The Steyning police court provides a case in point. A young motorist, Harold S. Powell, aged 19, accompanied by three friends, had a day's outing in a motor-car, proceeding from Storrington to Brighton. On the way defendant was seen driving the car with his left hand and firing a revolver with the other. In one instance water splashed up from a pond by a bullet went on to a boy's face. Shots were also fired on the homeward journey. Through his counsel defendant said there was not the slightest intention of causing any harm or annoyance to anyone; that it was a sill

youthful freak. The bench, in fining the defendant £2 on each of three summonses for wantonly firing a pistol within 50 feet of the centre of the road—the offence being committed in three parishes—said the penalty was absolutely inadequate for such extraordinary conduct. They, however, marked their serious view of the case by mulcting one of Powell's companions in a fine of £7 10s. and costs for driving the car without a licence, while Powell indulged in his revolver practice on one part of the journey. It is all very well to be considered a good shot at Sandhurst, but to take a motor-car journey as an occasion for indulging in a little practice is much to be deprecated, and it is fortunate for young Powell and his companions too that no human being was struck by any of the bullets.

HOW THE LARCH SAW-FLY HAS BEEN KEPT UNDER AT THIRLMERE WATERWORKS.

SOME four or five years ago the larch saw-fly appeared in large numbers in the Lake District and for the most part was allowed to continue its ravages unchecked save in the Thirlmere district, from which Manchester draws such a large proportion of its water-supply. Naturally, this district, too, was invaded, and the larch plantations that had been set out by the Manchester corporation suffered heavily. Happily, however, the zoologists were able to suggest an effective remedy. Professor Hickson, of the University of Manchester, suggested that bird life should be encouraged on the estate, that the young larches should be hand picked to get rid of the flies, and that tarred tow should be wrapped round the stems. To encourage birds to settle on the estate round Thirlmere 250 nesting boxes were scientifically distributed in the trees, and of these 85 per cent. were occupied last year. This year 60 boxes have been added. The result has been that last year the saw-fly could hardly be found on the estate. The birds, especially the tits, eat up the caterpillars the moment they hatch, and in this way prevention proves to be better than cure. Care is taken to feed the birds during the winter. This is another good illustration of the usefulness of "economic entomology."

HEALTH AND CLIMATIC CONDITIONS OF RIO DE JANEIRO.

IT is stated in the annual report of Mr. Hamblock, the acting British Consul, that the population of the city of Rio de Janeiro, Brazil, is estimated at about 670,000 and of the surrounding suburbs at 200,000, thus making the total population of the federal district 870,000; the area is 1100 square kilometres. Rio continues to be free from yellow fever, though an isolated case was reported in the early part of 1911, but this was proved to be a case brought on a steamer from Bahia. Tuberculosis and diseases of the digestive organs are responsible for the majority of deaths in the district, while cases of "grippe" (a somewhat vaguely defined malady, probably influenza, but one which in its most serious form of "grippe intestinale" is said by some to be typhoid fever) are becoming more and more frequent. The summer was trying and the lack of rain abnormal. Farmers in the interior suffered considerably owing to the droughts, cattle died in great numbers, and many crops were ruined. The city was fortunately saved from what threatened to become a very serious shortage of water, but the scare has drawn the attention of the authorities to the many faults and conditions in the administration and control and *matériel* of the water-supply, and the matter is said to be receiving all possible consideration. In March, 1911, violent gales and torrential downpours of rain caused floods in all parts of Rio, communication was interrupted, and the lighting of the city suffered. The authorities are adopting measures to prevent, if possible, a repetition of this state of affairs, but the difficulties in the way are considerable owing to the peculiar position of the town, which receives tons of water from the surrounding hills, while means of egress for the water are few and quite inadequate. The birth-rate in 1910 was 27·79 per 1000 inhabitants and the death-rate 20·54 per 1000. There was an epidemic of measles from July to December. The deaths from "grippe" in 1910 numbered 678, as compared with 484 in 1909 and 481 in 1908. Tourists continue to come to Rio in increasing numbers, attracted by the extraordinary natural beauties of the place. The cost of living may, at a fair estimate, be considered about three times as high as in Europe.

HOSPITAL FLOORING.

THERE are various opinions with regard to the best kind of flooring for hospital wards. Many architects still use hard wood, such as maple, teak, oak, in very narrow widths like a ship's deck. Others use a form of flooring which is suitable either for laying on a board floor or a concrete floor. It is a German invention. The material is made up largely of sawdust and indurating substances, and it is put down in a plastic state, various forms of acid being used to harden it. "Dolomen" and "Terrano" are examples of it. A well-known architect informs us that he has come to the conclusion that the best form of floor is of concrete, finished with a smooth cement surface, and then covered with good linoleum stuck down solid all over. This is quiet and warm, and slightly elastic, and most easily cleaned. The "Terrazzo" paving, which is a sort of marble concrete rubbed down to expose the marble in a sort of rough tesselated pattern, is a very pretty form of flooring, but it is colder than "Dolomen" and not so elastic. It is rather unyielding to the feet, and the nurses sometimes complain of it, as they never do of linoleum. In all passages, corridors, and places where smartness is an asset, or where quick rough cleaning is necessary, such as sculleries, "Terrazzo" is the most suitable flooring. We are led to these remarks by the fact that several correspondents have recently asked us for advice upon the subject of flooring in connexion with the fitting of domestic buildings for hospitals and similar purposes.

IS LEPROSY TRANSMISSIBLE?

"THE answer is in the negative," according to Dr. G. Photeinos, professor of dermatology in the University of Athens and director of the Hospital for Contagious Diseases in the same seat of learning. Leprosy has of late numbered many cases in the Island of Crete, particularly at Spinalonga, and Professor Photeinos, just returned from a prolonged visit to the locality, has, as the result of bacteriological and clinical research, been constrained to agree with the Cretan physicians that not even by inoculation can the disease be transmitted from the leprous to the non-leprous subject. Of his *catena* of cases the most striking is that of a young woman who, finding her husband to have been officially declared a leper and grieved beyond measure at the prospect of being separated from him, seized a knife, made a deep incised wound on her person, and squeezed into it a quantity of the virus from the sores of the said husband who was standing near. "Now," she exclaimed, "I too am a leprous subject and entitled to remain with my husband." The two were accordingly sent together to Learocori (the leper village), and there the devoted wife, spared from the disease, continued for 15 years to take care o her husband and of the other patients, showing herself to be an excellent and assiduous nurse. Her husband is now dead, but the widow, still immune, remains in the village, wedded to her self-imposed *métier*.

HOSPITALS IN BASUTOLAND.

Mr. H. C. Sloley, the British Resident Commissioner in Basutoland, in his annual report just received at the Colonial Office, mentions that new hospitals have been opened at Mafeteng and Mohale's Hoek during the year. Another small hospital has been completed at Moyeni, in Quthing District, but not yet opened. Maseru Hospital has been enlarged to accommodate 40 beds. The work done in the public dispensaries is most gratifying, a total of 37,000 cases having been treated during the year. The question of leprosy, which has been drawing attention all over South Africa, is being studied in Basutoland also.

TUBERCULINS.

"TUBERCULINS and their Employment in Diagnosis and Treatment of Tuberculosis" is the title of a pamphlet issued by Meister Lucius and Brüning, in which, after a brief *résumé* of the details of Koch's researches for a non-toxic immunising agent derived from the tubercle bacillus, they describe the various tubercle preparations now put upon the market, dividing them into three classes: (1) Preparations obtained from broth containing tubercle bacilli; (2) preparations obtained from germ-free tubercle bacilli bouillon; (3) preparations from free tubercle bacilli. A section on the diagnosis of tuberculosis follows, which describes the methods of subcutaneous injection, the cutaneous reaction, the percutaneous inunction method, and the conjunctival reaction. The clinical results of diagnostic tuberculin tests and the employment of tuberculins for the cure of human tuberculosis are pointed out. The pamphlet will be sent gratis to physicians on application to the publishers, 51, St. Mary Axe, London, E.C.

L. C.—There is a good description of the Plombières baths and waters in "Crénotherapie, Climatothérapie," &c., par le Professeur L. Landouzy and others, published by J. B. Baillière et Fils, 19, Rue Hautefeuille, Paris. 1910. Price is something between 8 and 12 francs. Pages referring to Plombières 384–396. Dr. William Bain and Dr. Wilfrid Edgecombe also mentioned it in their book, "The Physiology and Therapeutics of the Harrogate Waters," published by Longmans in 1905, and the Plombières treatment has been carried into practice at Harrogate since then.

Dr. W. H. Bishop.—"The Ship's Surgeon's Handbook," by A. V. Elder is published by Baillière, Tindall, and Cox, at 5*s.* net.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for July and August, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
" 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.

May 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
June 1st–August 31st (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 3rd–5th (Bergen).—Seventh Norwegian Congress of Internal Medicine.
,, 6th and 7th (London).—Imperial Health Congress.
,, 13th and 14th (Oxford).—Oxford Ophthalmological Congress.
,, 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 26th (Rouen).—French National Dental Congress.
,, 26th–29th (London).—Universal Races Congress.
,, 31st–Aug. 4th (Paris).—Second French Congress of Stomatology.
,, 31st–August 5th (Dijon).—Congress of the French Association for the Advancement of Sciences.
August 1st–6th (Amiens).—Twenty-first French Congress of Alienists and Neurologists.
,, 3rd–5th (London).—British Dental Association, Annual Meeting.
,, 12th–18th (Brussels).—First International Congress on Child Study.
,, 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 21st–23rd (Larvik).—Fourteenth Norwegian Physicians' Congress.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Études Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, 31st and Sept. 1st (Vancouver).—Thirteenth Annual Meeting of the British Columbia Medical Association.
,, (Carmarthen).—Welsh National Eisteddfod.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 5th–7th (Philadelphia).—American Electro-therapeutic Association.
,, 9th–11th (Ostend).—Fifteenth Flemish Nature and Medical Congress.
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–15th (Berlin).—Third International Conference on Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th–23rd (Rome) Seventh International Congress of Dermatology and Syphilology.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos-street, W.: at 8 P.M.

Specimens:

Dr. V. Bonney: An Aid in the Diagnosis of Carcinoma.

Mrs. Scharlieb, M.D.: (1) Adeno-carcinoma of Ovaries and Uterus; (2) Carcinoma of the Rectum.

Address by the President (Dr. Macnaughton-Jones): The Appendix—its Relation to the Causation and Surgical Treatment of Affections of the Adnexa.

FRIDAY.

ANNUAL GENERAL MEETING OF FELLOWS at 5 P.M. Election of Officers and Council for Session 1911–1912.

SATURDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes)

Provincial Meeting at Cambridge.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 2, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M., Lecture:—Mr. R. E. Bickerton: Ocular Malingering and its Detection.

TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. S. R. Russell: The Diagnosis of Intracranial Tumours (with lantern demonstrations).

WEDNESDAY.—4 P.M., Mr. G. E. Waugh: Clinique (Surgical). 5.15 P.M., Lecture: Dr. A. H. Giles: Malformations in their Clinical Aspects.

THURSDAY.—4 P.M., Mr. H. S. Clogg: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. G. R. Turner: The Modern Treatment of Hernia.

FRIDAY.—4 P.M., Mr. K. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Ll. Williams: The Extraction of Teeth, When and How.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Intestinal Obstruction from Medical Point of View.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Intracranial Tumours.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Clinical Pathology.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Dr. H. Pirie: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Paraplegia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Cerebellar Disease.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Mackenzie: Pleurisy.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. J. Atkinson: Nose.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, are given in this issue of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1911 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 28th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks.
June 22	29·99	S.W.	...	114	67	53	57	61	Overcast
,, 23	29·81	S.W.	...	113	67	54	54	63	Overcast
,, 24	29·46	S.W.	0·03	117	66	54	54	55	Overcast
,, 25	29·62	S.W.	...	72	55	51	52	54	Raining
,, 26	29·87	W.	0·23	115	60	51	50	55	Cloudy
,, 27	30·16	N.W.	0·27	113	70	51	50	56	Cloudy
,, 28	30·28	W.	...	124	73	55	59	64	Cloudy

The following journals, magazines, &c., have been received:—Revue Française de Médecine et de Chirugie, Revue d'Hygiène et de Police Sanitaire, Annali di Medicina Navale e Coloniale, Revue de Psychiatrie et de Psychologie Expérimentale, Transactions of the Society of Tropical Medicine and Hygiene, Revista de los Hospitales (Montevideo), Australasian Medical Gazette, Malaria, Bulletin de la Société de l'Internat des Hôpitaux de Paris, Indian Medical Record, Journal of Nervous and Mental Disease, Hospital Assistant (India), Indian Medical Journal, Australian Medical Journal, American Journal of Surgery, Medical Chronicle, Quarterly Journal of Microscopical Science, Canadian Practitioner, Albany Medical Annals, American Journal of Obstetrics, Steward, Bulletin de l'Association Française pour l'Étude du Cancer, Pacific Medical Journal, Interstate Medical Journal, Cornhill Magazine, Archives of Pediatrics, British Journal of Dermatology, Archives of Internal Medicine, Bristol Medico-Chirurgical Journal, Mercy and Truth.

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